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 GGTGTTGTAGAGATGGGTTGTAGAGACGAGTTGTAGAGATGGGCTTCAGCCCGCGGATCCA  
 45 AGCAATTCGACCGGAACCGGCGCGCGCCCAATCCCCGAAACCTATGCCCCGCGCAATCC  
 TGCCACTCTTCTGTCATTTCCGCGCGCTTTCGTCAATCCCGCGAAAGCGGAATCCGAAAC  
 CCGCGCAACAGGAATCTATCGGAAAAACCGAAACCCCGCGCAACCGTCACTCCCGCGAA  
 ACCGGGAATCCAGCCCCCAACCGCGCGCAGGAATCTATCAGAAAAACAGAAACCCCGCG  
 GCGCTCATTTCCGCGCAGCGCGGAATCCAGACCCCAACCGCGCAGGAATCTCAGCGAA  
 50 AAACAGAAATCCCGCGCGCTGTCATTTCCGCGCAGCGCGGAATCCAGACCCCAACCGCG  
 CAGGAATCTATCGGAAAAACCGACCCCGCGCACCGCTCATTTCCCGCGCAGCGCGGAATC  
 CAGACCCCAACCGCGCAGGAATCTATCGGAAACGGCTGAAACCGAACCGGATCGGATTC  
 CGCTTCGCGGGGAATGACGCGCGCAGGGGTTTCGGGATTCGCGCTTCGCGGGAATGACG  
 CAAAGTTCGCGGGAATAACGAAAGCGCGGAATGACGCGCAAAAAGCCGCTGCCCTTTGCG  
 55 GAGCTCCCGCAACAAAAACCGCACGCGCGAAACCGCGCGGGAAGGATAGTCCAGCAAC  
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 TCGTTGATGCGCGCTGTCGACCGCTTTCGCGCGCGCGCGGAATTTTCGACACATCGGGG  
 CACAGCGCTATGTTAAGAGTTGTTTCGGGGTTTTCGCTGTGTTTCGTTTTCGATTACG  
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TCACGGTTTGTTAAGGATTGACGTTGCATATTTTTTAACCTCTCTTTTATTCGCTTTGGC  
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CGTATCGCCTAGATAAGCAGCGGCACATAACGCGGTTTCGGGTAATCAAAAGCGGACATC  
5 GGCGCAATAACGGCCGTTGTCCAGCGTATTTCGCCGACTGATTCAAAGGGGCAAAATTCG  
CTCTTCGATATTGGCTTGATTTTTTTCGGAGTCAAATTCATCTTCATTGCGAGCTGCGAG  
CGTATTTTGTCTGTTACATTATAAGCGGCAAAACCAAAATGTAAATCAAAAAGGAAAA  
CCCCAAATGACCATCTATTCCAAAACGGCTTTTACGACGACATTGGCGGCATCC  
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10 CGATTACCACGAATGGGACGGCAAAAAATGGAATCAGCAAGCGCCGCGCCGCGCGCG  
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15 CTTGGCTGTTGCCGCGCGCGGATTTATCGGAAGCGTCGACAGCTCGAAGACAAATGAA  
CACCATCGAAACCGCGCCGGATTGGACGCGCTGGAAGGAAATCGAAGAATGGACGCT  
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20 TTGCAGCGCCACCACTGCGCGCAGCGGTATATCAGCGAACTGAAAGGACGGCAGCAGCAG  
CGCGGGTTTCAACCAAGCGCGCGCGCGGGGAAAGGGGACGCGATGAACACTACTTCGGA  
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30 TTTGTTGTAGAATCATCGGAAGAAAGAAAGCGCTTGTGAGTCGCGCGAAGGCTTGGAC  
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AATGGGGAAGAGCTTGATGCCGTTGGTGAACATATCATTAAAGCCGCTCAGGCAGACGCT  
TTGTGCGCAATACGCCAGCGTTGCGGATAATGGCTTTAAACCGGTGAGAAAGCTGTGTC  
GTGTTCTGTTTTCGCCGCTGTAACAGCGCACGCTTTCGCGGTGTCGCGCAGCGCGTAT  
35 GTGGGAATAACGGTAGTCGCCGTTGAGTTTTTCGTTTCATAATTGTAAAGCAATCAAAGG  
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CGAAGCGATAAATTCGCGCGCTCTGTTGGATACGCTGGTCGATGTTGTCGCGCGCGTG  
40 CGCGCGCATTCGAGCGGCTAGTAGTTTTTTCGCGCAAGCGAGCGTGTGTCAGCACTTC  
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45 CCGCGCTTTTCGGTGTGAGCAAAAGCGCAAGCGGTTGGAATAAAGCTCGGTTTGCATT  
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GATTAAATTTAAACAGTACAGCGTTCCTTCGCCCTTAGCTCAAAGAGACGATTCTCTAA  
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50 CTTGTCGTGATTTTTGTTAATCCATATACCATACCAACACGCGCGAATTAAGTTTAAAT  
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CCGCGCCCGCAATTTGGGCGGTGCGGCTTGCAAGTATCAAGATTTCGATATGCGCGCTG  
AAGCTCGGGAGGTTTCAGACGGCATATGCTTATTGGGCTGCTCTTCAACGAATCTCGGA  
CCTTTCAAGATGCGGTTGTGAGAATAAGGCGACAGCAGTGTGATCGCGCGGTTTGGAA  
55 ACCTGATAACCGCGGTCGGTACGGCTGTGGCAATCGATTGACCACTGCGCTGACCAAA  
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CACAACTCTTTTCCGTTGCGGGAATCGACAGCGGTGCTTTGGCGGATACGGTCTGACG

CTGCTCAAAATTGATATGAAGTGCCGTATTCGGTAACCGTAATGTACAAAACCCGCATCA  
 TTGCCGAAAACTGTGATGCAGTTTTTCCGGCCGGACGGCGTGAATATCGCCGGCATTGGTC  
 AAGCCGTTTGTGTTGAAGTTTCTCCACGACTGCGGCGGGGAAGACGTAATAGCCGGCT  
 TCGGAAAGCGCGCGCGGTGGAAGCCAGTACACCCCATGTTCCGTTGACATCGGCGGAT  
 5 TCGTTGAGCGGCGGAACCAACCAAAATGAAGCCGTTTGTCTTCCCTGAATGACGTGTAG  
 TCGAAATCGGCGCTTTTGAACCTGGCAGGACAGCGCCAAACGCGGCCAAGCCCT  
 AAAATCAAGGTTTCTCGCTTGCCTCTTTACCGGTTTTCATCAGGAAGTCGCAATAA  
 CGCCGATTCGGGAACAGCCTTTCTCTTCTCAAACTGGCGGAACGCGCCTCTTTGT  
 10 CTCCGAACGGAAAGCAGCAGTCCAGATGGCGTGGCAACCGGGGAGCATTGAT  
 TTTATTGTTGCCGAGCTTCCACAAAGGATTTTTCATTCTTTTCGGATCTGCTGGCC  
 AAGCAAGTGTCGTTGTTTTCAAACT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 45>:

# gnm\_45

CGCGTCCAAATCAACCGCAGACCGGCGAATACCAACCTTCGCGCGTGGCTGATTGTC  
 CGCGATGAAGCTATACCTATCCGATGTGCAAAAACCATCGAGGAATCCAGAGGAA  
 TTCGCGGACTACCATCCAAATCGCGAATACTACGAAGAGCAGCTGCCACAGCAAGGCT  
 TCGCGCGCAAGCGCGCAACCGCCAAACAAATCATCTGCAACGATCCGCGATCGCG  
 AGCGCGAGCAATCTGAACAGTTTCTCGCGTCAAGAAGACATCGTGCAGGACCG  
 20 TCAACCGCTGCAACGCCAGGCAATCATGTGCAAGCTGTTCGCGCAAACTGGAAGCGC  
 TGATTCGCGCGACCAATGATTCGCGCGCAAACTTCGCGAGCGGCGACCGCATCGCG  
 CCCTCTTCTCGCGCTGAAGAAATCGGCAACACCGCGCCGAAACAAAGTCATTCTGAGCC  
 GTACTTCGCGGATTTCTCGTCAAACTGTACGCCAATGAAGTACTGAAATTCGAGAGC  
 GCATGCTTGAATTCGCGCTGTGCGCGCGACCGGGGCAACGTCGCAAACTGCGCGTCA  
 25 AAGCCAAACGACCGCATCGATCCGCAAGGCACCTGTATCGCGCTTCGCGGTTGCGGT  
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 AACCGCGCAATTCGTGATGAGCGCGCTCTCACCGCGCAAGTCAGCGCATCGTCATCG  
 ACGAAGCAACACGCGCTCGATGTCTATCGTTGCCGAAGACAGCTCGCGCTCGCATCG  
 GCGCGCGGTCAAAACGTGCGCTTGCTTCGCACTGACCGGCTGGCAGCTCAACATCA  
 30 TGAATTCGCGAGGCGAGCAACGCAATGCGCGAGAAGATGCCGCATCCGCGCCTGT  
 TTAATGATCACTTGAACGTGGACGAAGAAACCGCGACGTAAGTTCAGGAAGGTTTTG  
 CAACCTTTGGAAGAAGTCGCTATGTTCTCGCGCGAATGCTTGCATTGAAGGATTTG  
 ACGGAAGCAATCGTGATATGCTCCGCAACCGCGCGCGATGCCATCCTGACCATGGCGA  
 35 TTGCGCGAAGAAAACTGGGCGAAGTGTCCGACGATATGCGCAACCTCGAAGCGATAG  
 ATGCGGATATGCTCCGAGCCTTGCGCAAGCAGGCATTACACCGCGGACGACTTGGCAG  
 AGCTTGTGTGACGAACGATTGAAATCACCGGTGTAACGAAGAAACCGCAAGCGCG  
 TCATCCTGACCGCAGCGCAACTGGTTTACGAAGCAATAAAGGGGTACAGATGAG  
 TAACAAACCGTAGAACATTTGCCGCGAGCTGAAGCGCCGCTCGAAGACCTGTTGAA  
 ACAGTTGAAGAAGCGCGGTGAGCAAAACAGCGGCAGGATTCCTGACGCTGGACGA  
 40 CAAACAGCTTCTGAACGCTTACTGACCAAGAAACCGCGACGACCAACCATCAG  
 CATCCGCGCACCAAAACCGAAGTCAGCACCGTTGACGGCGTAAAGTCGAACACGCA  
 ACGCGGAGCGACTGTCAAGATTCCTTCTGCGGAAGAATTGGCAGCAGAGTAAAAGCCG  
 CCAACCAAGCGCGCACTGTCCGCGGAGCAGACGCGCAAGACCGGCAAAAGCCGCG  
 AGCCGAAGCTGCCGACGCGCAGAAGCCGTCGCCAAGGCAAGCGGAAGCGGCAAACT  
 45 GAAGCGCGCAAAAGCAGGCAACAAAGCCAACTGCGCGCAAAACCCAGAAAGCAAA  
 AGCCGAAACCGCACCGGTTGCGCGGAAACCAACCCGCGCAAGAAAGCAAGCGGAA  
 AGCCCAAGCGGCAAAATGCGCTGTAAGAAACCGCGCGAGCCAAAGAAAGCCGCA  
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 50 ACBCGCTGCCCGCACTTCCGCGCCACCAGGAAGCCCTGTTGAAGAGAAACAGGAACG  
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 AGCCAAACCGGCAAGCAGCGCTCCGCCAACTGTCGCAAAACCGGAGCAGCCGCGC  
 AGCCGTGCAAAATAAATCTGTCAATCCGCGAAAGCGAAAAAGAACCGCGCAACCG

CGATGACGAAGGTC AAGGCCGAAACGCCAAAGGCCGAAAGGCCGAGACGCGACCG  
CAACCAATGCGACGCAATGGCGACGACGAGCGGTACGCGGGCGGCAAAAAGGCCAAAAAACT  
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5 TTTGGTTCCCGAAACCATTACCGCTTGCCGATTGTGGCGCACAAAATGGCGGTCAAAGGGCGT  
GGAAGTGGTCAAAGCCCTGATGAAGATGGGCATGATGGTTACCATCAACCAATCCCATCGA  
CCAAAGACACGCGCCTGATTGTGGTGGGAAGAACTCGGCCACATCGGCAAACTTCGCGCAGC  
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10 CGCGTACCACGTTGAAACCCCTCGCGCGGTGATTACCTTCTTGGACACCCCGGGCCACGA  
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15 GTTTATCGACGTTTCCGCTAAAAAGGCCCTGAACATCGATGCAATTTGCTCGAAGCCGTCTT  
GCTCGAAGCTGAAGTTTGGAACTGACCGCACCTGTGATGCGCCCGCAAGGCATCAT  
CGTCGAGGCGCGCTTGGCAAAAGGCCGCGGCGCGGTGTCACATTTGCTGGTTCAAAGCGG  
CACGCTGAAAAAAGCGATATGCTGCTGGCCGTACGGCATTCGCAAAAATCCGCGCGAT  
GGTGCATGAAAACGGCAATCCATTACCGAAGCCGGTCCGTCCATCCCCGTGAAAATCCT  
20 CGGCTGTCCGACGTACCGAATGCGGGTGAAGACGCGATGGTATTGGCGGACGAGAAAAA  
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GTGCGTTCATCATCAAGCGACAGCTGCGAGGCTCTTACGAGGCTTTGGCGGGCAGCGCTGAA  
25 AARACTGTCCACAGACGAAGTGAAGTGAACGTGTTGCACAGCGCGGTGGCGCGGCATTAC  
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AGGAAAGAACAGGTTACCGGTACCGTCAAAATCCGTACGGTCATCTCCGTTTCCAAAGT  
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30 CCTATCCGCAACAACGTGGTTATCCACACGGGCGAATCGCTTCGTTGAAACGCGATAA  
AGACGATGAAAAGAGTCCGCATGGGCTTCGAGTGGCGCTGTGATGCTCAAAGGCTACAA  
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GTAAATCTCTTGCAAATAAAATGCCGTCTGAAGCGTTACAGACGGCATACGAAACGGGTT  
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35 CCGATTGGAATCTGACTTGCCATACAAACAGGCTTCAGACGGCATATTATTGCCCGCTAA  
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CGTATTGAGCGACGACCAATTCCTCAATGACTGCGGGCTTTGTTGAGTTCGGGCGGAGCTCT  
GGCGGCATCCACGGGACTTTGCGGCTGTGACGCTCGATATCCGACTGTGCGCGGTGCC  
40 CGCGTTTGCAGGACGTGGAGCAAAATCGAAGGCGCGGCGCGGAGCAGGGTCAGGGTTT  
AGGGTCGGTGTGCGAGGTTTGGCGGCCAGCGAGTTTGTGCGAAATGGTGGCGGATTTGGG  
CAGGATCGCGCCCAAAAAGCCGCGATTGCGGTACCCAATCCGAGCGAGCGCCGCGATGG  
GCGGATTCGAGGCCCAAGCCGATGAGCGCGCGGTTGCCGCGCCGTGCCGGTGGCGGAT  
CGCGATATTGTTTGAGCAATTGCGCTGCGAACGGGTTTGCGCGAAGGCTTGCGGCATCGA  
45 CTCGCGCGCGTTCGATTTCGCTGTGGTAGAAACCGGTAGAGGGCAACAGCCGCTGCTCGAT  
GTCCGCTTCGAGTTGGCGTATTTCCGCTGCGATGGTTTGACGACGCGTGGCGGTTACCT  
TGTTCGCTCCACTTCTGCTGAAGGCGCGGCGCATCAATAAAAAGTCGCGATTTCGCG  
GCGCGCTTCGCGTCCAGCGCTGCCATTCGCGCGCGCATGGCTGTGAGCGGTCAAG  
50 GTGCTCGCTTCGGCAACATGTTGGCGAGGTTTCCCAACAGGCGCAGTTTCGCTTCAA  
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GAAATCATGTGCGCACCGTGGCTGCCGAGAACTGTTGACGCGGTTTCGATGCGGTCTGA  
ACGATTGTCGATATGTTTTCCAGCCTATCCAGCACGCGCCCGCTTCTCGAGTCCGGG  
55 CGTGTGTCGACAGGAAACGACGCTGTGCGCGCTGCTGATGGCGGCTTCTTCGACATCG  
ACGCGGTGCGATGGGCGTTTTTGACTTCGCCGAAACCGCTGTGCGCAAAAGGGTACG  
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 CAGAACATTTCAGTGAAGTTATTTGGTCTTCAAACGCCCTTCCTCGCGCGCCCTGTCAG  
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 5 TCTCCGAGAGTCGGACAATCTGCCGCAACACGCGCGGTCGGGCACAGTTGGCGCGCA  
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 10 GCCAGCGCGGATGACCGCTGATAATAGGGCTTTCCAAATCCAAATCCGTTTTCGGTTG  
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 15 ACGTATATTGCCGCACCAAAGCAGCAACAATACCGACACAGCATTCGAGCAGCGTGC  
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 CGTCGCGATACAGCGCAACACCGCTGATTTACAGGGCTTTTCCCGCAAAACAGCTCG  
 CCGGATCTGCTGAAAAACGCCCTTTCACACGCGAGAACACATTGCCAACCATCTG  
 20 CAGCATCAGCGTATTCTATGCCCAACACGCGCCGCAAAACCAAAAGAAATTCAGACCG  
 GATTTGCTCATTAGAAGTAAAGTACTGAAACACCGGTAAGAAATGCAACGTCGCGCGCA  
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 25 TACGAGCAGCTCAACCAAGTTTTCGGGATGGATTCAACATAAAATGCCGCTCTGAAAAATA  
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 30 TCAGCGTATCGGTTACGCGCATCAGCTTCTCTGCTCTATTGAGTTCTCGCTGTACC  
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 35 GGTGGCTTTGGCGGTAATGAAATCCCTGACAGCTCACTCCGTCGCGAGACTGGCTTT  
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 40 TCACTGATAGGACAAATCCGACCGCGTTTTCGTGCCAAATAATCATATAAATGAGT  
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 GCAAGCAAGCAATGCGCGATAGATGCCAAGTGTCTCCCTCGAAAAAGAAACGGGATA  
 TTGGACTCGCGAAATAATACCAACCGATGATGGTGGTGAAGGCAAGAAGGTGAGACAC  
 45 ACGGCAAGCAATTCGAACCGAAGCCGGAATGCGCTTGTAAAGGCAAAATGAGTAAGC  
 CGCGCGCCCTGTTCCGCCGAAGGTTGGCATCGGTGACGAGGATAATCAATGCGGTAGCC  
 GTACATACCAAAATCGTATCGATAAACACACGCAAAATGCCGCCATACCTTGTCTGCACA  
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 50 GAAACAGACCGCGGCCACGCCGAACGATATCGTTTCGCGCATACCGATACCGGACGA  
 CCGCCCAAAACGGCTTCGGGATTGAAGGCGCGGTAAAGATGTGGTGAACATCGGCACA  
 ATATGTTCCGAAAAATCAACAGGATAACGACGCGCGCAAAATATAAAACACAGCCGATA  
 AACCGCACGCAAAATGGCGATATTGGCAATACGGTTACGCGCGCAATCACACCATCT  
 CCGCGAAGGACGGCAAGCAATAACCGACTGCCAAAGAAGGCACATCAATGCGAATGGTA  
 ACGGCAAGCAAGTGGAGTTTGCCTGTGTGCGATTACCGATAAAGCCCAATGGGATATTC  
 55 AACCGAATGAAAAAGAAACCGGACAAAAACGCGCGCGCGCTTTCGGATTTTCGGAATC  
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 TATTCTTCGCGCAGCAGTGCTTCGCAAAAAATCGTGACATCCCAAAACGGCAGAACG  
 CACATCCAAAAATCGCGCCCGGCCGCTGCGGTGATGGCGGTGCGCACGCGGACG

TTGCCCGTACCGATTGGCGCAGATATGGCAACGCCAACGCCTGAACTGCGATAAAGAC  
 TTGTCGCTTTTATCGCCTTTGGCAAAACAGCGCGCGAATACGGATTGTAATCCCGCGCCC  
 AGCTTGGTAACTCGCGGCGCACCAAGATACAGCGTAAAAAACAGGCCGATACCCAAAAGC  
 GCCTAAATCAGCAGGTAGTCCCAAGGAACCGATTGACTGTACCACCAGCAACAGACAAT  
 ATATTTCCATAAAATAAACCTTATCTTACAATTAATAATGACTGCCTTCCAAAAGACATT  
 CCAATAAGGAAACACGGCGAGCAGACCGTATTGCGCGAACAGATGCCTTAAATGTGCAA  
 CAATCGGGAGAAGCTGCGC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 46>:

#### 10 GNMAA91R gnm\_46

CCTTCGACCAAAACGACTTCGTACTGCGCGSCCAATTCTGTGTGGCGGTGCGGATTTTG  
 TCCAACTCCAAAGCCCTGCCATCCAGTCGGCGGCGAGGTGAGGCGAAnGnGATAGCTG  
 AAGATTTCGGGCATAGTCAGCCGCCGCTTTGTCGGCTTCCTGCATCGGTATGCCATAATT  
 TTCCGGTTCGACGGCGATGTCGTGCGGCCAATAACCTCATGATGGAATAGTACGGTTTTTCA  
 AAGGTACTTTAATCATAGAGCGTCGAGCTTGATCCATTGCTTTTTGAACAGCAACTGGTA  
 CTTCCTTTGATTTACCTTTGCCCATACCAATGnAGCCATnACCATCAACCAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 47>:

#### gnm\_47

20 TTTATTATGTCGCTTTCTGCTGTATTCTGTCCGGTACCCTGAGTCAAGAGTCTGCA  
 TTTGAACTTACCGTGCCATTGTTCCCATCCTTTGGTCAAGCTGGTTTAATCGGTGTA  
 TTGCGGCTTATCTGCACCATTTCTCGCGGTATCCGCTTTTATTTTGGTATCGGCAC  
 AAAGCCCTTGAGCTGAATACTGCGCGCAATACCGCTAAAGCCGTAATTTGCTTCTGCATTG  
 GTTTTGACTGTCGTTTTGGGAGCGTTGTATGGTAGAAGTAAATTGACCGGTGCCATT  
 25 ACGGTTTCGCGGATTGGGTGATGCAACGTGCGACTGCGGTTATTATGTTGATTATACCG  
 TTGCATTTTGTAGGTTCTATTTCCCTGCCATAAGAATATCGGCATGGCAGGCATTTT  
 TTAGTCAAACCTGGGTAAAAGTATTACCCAAGTGAGCTTCATCGCGTATTCTTGACAG  
 CTTGGGTGGGTATCCGCGATTGTGGATGGACTATATCAAACCTTCGCGCGTGGTTGT  
 TTTTCAGGTTGCCACCATCGTTTGCTGGTGGCTGTCTCGTGTATTCAAGTAAAGTGA  
 30 TTTGGGGTAAATATGGGTTTCTGTTTCGCAAGTTGATGCGGTGATTGTGCGCGGTGG  
 TGGTGAGGTTTACGCGCAGCCCTCCAATTATCCAAATCCGCTCTGAATTGTGCGGTTT  
 GTCTAAAGTGTTCGACCCGTTTCGATACCGTAGCGGCGAGGCGGTATTTCCGCCTC  
 TCTGGGTAATGTGCAGGAAGACCGTTGGGACTGSCACATGTACGATACCGTGAAAGGTTG  
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5 GTGATCGGGCGAAAAATCCGCCATATCGCTGTTTCGCCGTGATGGTTCAACACTTTTAA  
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CGG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 48>:

**gnm\_48**

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25 CAACTTGGCGACTTCGAAGGCTATTGCGATTCTAAAGGCTGATTTCCGCCCGCAAGC  
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 20 ACAGCGTCGGCCAGTGGTGTTCATCATGCGCGCGCAGGCGGAGCGGCAGGACGATCG  
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25 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 49>:

#### gnm\_49

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10 AAGAAAATAAAAAAGCTCTTTTTCAGCCTAAAAAGTTTTCAGAGTATCAATGTGGTGT  
ACAACTCTCCATTTTATCTTACCCCCCAGTAACAATTTTATGTCATATCTAATTTA  
GGTCAGCTTTAAACCAAGTCCAAAGCCTAATTAATAACAAAAATTAACCAATAATTTACTA  
TGAAATTTATATACTTTCAAAAACTTAAAAATGCGCTAAGTTAGTTTCATCAATCAGCTAAC  
AAGAATCTATTGAATCTATTATCTATTTGAGCTTCTAGAAGCCCTAATAATATAAATCT  
15 CCTAAAAAATTAATCTTTATATTTATAGAAGTTACAAAAAATCCTTAATATTATACAGCCT  
GCTCATCTCTATATGCTGTCTTTTACAGGCCACTACTCTATCTGATTAGTATTGCAAAA  
AAAAAGAATATTACGACTCAATTAATTGATGAAGGACTGGAACATATGCTCCTTTATTA  
GAATCATTTTTCATATCATCCAACAAATAGAACGTTATTGATTGGAATATCTTAAT  
ATTAAAGGATATATAGATCATTTTGACATATGCAATGCCCCCTTTCGGAATATGCTAAA  
20 AAAATATTTAATGCAAAAAATATTAACCGGTTTTTTCGCTGGCGAAAGGGGGATGTGCTG  
CAAGGCGAATTAAGTTGGGTAAACCCAGGGTTTTCCAGTCACGACGTTGTAACACAGCG  
CCAGTGAGCGCGCGTAATACGACTCACTATAGGCGAATTTGGGTACCGGGCCCCCCTCG  
CAGTCAGCGGATGCAATTCACAAAAATAGGTACACGAAAAACAGTTAAGGGAATCAGT  
TTATGCAATCCTTAACCTACTTATTAATAATTTATAGCTATTGAAAGAGATAAGCAATT  
25 GTTCAAGCTAATATTGTTTAAATCGTCAATTCCTGCAATGTTTAAAGGAAATGTTAAAT  
GATTTTTTGAATAATTTTCTGTATTCTTTGTTAACCCATTTCATAAGCAAAATTAATAT  
ACTCTGCTTTATCTTTGTGTGATATTCTTGATTTTTTCTATTTAATCTGATAGTGAGC  
TATTCACCTTTAGGTTTAGGATGAAATATTTCTCTGGAACCATACTTAATATAGAAATAT  
CAACTCTGCCATTAAAAATAATGCCAATGAGCGTTTTGTATTTAATAATCTTTAGCAA  
30 ACCGATATCCAGCAATTAATAAATCTCATCAGCTATACATACTACAAAAACAATTTGCGTA  
TTATATCCGTACTATGTTATAAGGTATATTACCAATATTTATAGGATTGGTTTTAG  
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TATTTCTGTAGTTTTGCATAATTTATGGTCTATTTCAATGGCAGTTACGAAATTAACCC  
35 TCTGTACTAATTAAGGGTAAATGCCCTTTTCTGAGCCGATTTCAAAGATATTATCAT  
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TTTGACTGTGTTTTATATTTTCTCGTTCATTATAACCTCTTTATTTTTTCTCTCTAT  
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ATTTATACTGCAATCTGATGCGATTATTGAATAAAAAGATATGAGAGATTATCTAGTTTC  
40 TTTTTTACAGAAAAAGAAAGTTCTTAAAGGTTTTATACTTTTGGTCGTAGAGCACAC  
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AATGGCGTGTTGTTAGCCAAAGCTGATATCGAATTCCTCGACGATAAATATTCTTGTA  
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45 CTTTTAGTAGCATAGCAATCAAGCCAATCCGGATCTGCTATTTTGGGGAAGTGAATCT  
TATTTGATCAAAATAAATCAAAACCCCACTACTCAAAATGCTGATTTGCAATAGGATT  
AGAAAAGCCTAAGCTGCAACAACCAACAGGGATACCTTTACATTGAGCTTCAAAAG  
CATAGTAGATGAATAAGATAAACAATACCCATTCTTGGGAAGCCTTGCAGGCTATTT  
50 TCGCTCTATTGTCAAAATTAACCTGCGCACTGAACTGCTTTGCCAGCTCTATATACGAATG  
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55 CATACGAGATAGAATACTTGCCTGATCACCGAATCATACACTGGAAACAGGTAATAAT  
CAATGGCCTTGAAGCAATATTAAATTGCGCATTCTGCTTAAAGAACCTTTTTTAAACCC  
ATTTTCAACCGATAAAATTAATCTGCTCATTAATATTGATGCAATTTCTTAATAAGTAAT  
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TTTGAAAGATGTTTTCTCGACTTTTGTGGATATAAATATCAATTGAGCATCTTTTATC  
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 5 GATATCAATATACTTTAACCAAAAAAATCTGAAGAAATCTACTGCTACTCTAGGGGATAAT  
 TATTTCAATTAAGATTTTACAAACCATATTATCAATCTATCAAAGTATTTTAGTATTTTA  
 TTTCTATGAAAAAATTTCTCGTTACCGGCGGCACCGGTTTATCGGCTCGCATACCGCTGT  
 TTTCTTTGCTGAAAAGCGGCCATCAAGTCGTGATTTTGGATAACCTATGCATTCACAGAT  
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 TATCCGGATCGTGAGATTTTGGCCGTATTTTTCGGGAAAACCGCATTGATTCGGTGAT  
 10 TCATTTTGGCGGCTTGAAGCGGTGGGTGAAGTGTGGCGAGCCGATGAAATATATGA  
 TAATATATGTTTCCGGCAGCTTGGTGTGGCGGAAGAAATGGCGGTGGCGGCGTGTTAG  
 CATTTGTGTTCAAGTTCTCGGCGACGTTTATGGCGATCCGGGCAAGTGCCTTATACCGA  
 GGTATGCGCACCGGGCGACACCCAGCCCTTACGGCGCATCGAAATCGATGGTTGAGCG  
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 15 CAATCCGATTGGCGGCATGAAAGCGGCTTGATTGGCGAGCAGCCAAAGGCCATCCGAA  
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 TGGCGATGACTACCCCTACCCCGACGGGCACGGGATGCGTGACTATATTCATGTATGGA  
 TTTGGCAGAGGCCATGTCGCGGTATGCAGGCAAAAAGTATGTAGCAGGACGCGATT  
 GCTGAACTTAGGCTCCGGCCGCGCTTCTTCGGTGTGSAATCATCCGCGCATTTGAAGC  
 20 AGCTTCGGGTTTGACGATTCCGTATGAAGTCAAAACCGCGCGTTCGGGTGATTGGCGGT  
 CTTCTATGCCGACCCCTTCTATACAAAGGCGCAAACTCGGCTGGCAAAACCCAGCGTATT  
 AACCCAAATGATGGAAGACTCATGGCGCTGGGTGAGTAATAATCCGAATGGCTACGACGA  
 TTAAGTTGACCTGATACAGGCGCTCTGAAGAGATGTTTTCAGACGCGCTCTTATCTGA  
 AAAACACACATTTCTGTCTGATATAATCTGTTATATTTTGGCTATCTCTGAAATTTA  
 25 TGAGAAAAATCCTTGTATCCGGCGCGCGCGGCTTTATCGGTTCTGCGGTTGTCGCGTATA  
 TTTATCCGAAACACCCGGGACGCTGTGCTCAATGTCGATAAGCTGACTTATGCCGCGCAAT  
 TGGAACTTTTGACTGAGGTAGCCGATATCCTCGTATGCTTTTGAAAGTGGATATT  
 GCGACCGCGCGCAACTCGACCGCGTATTTCGCGCAATACCGGCGTGTATGCCGTGATGCAT  
 TGGCGGCGGAAAGCCATGTGACCGCTCTATCGGTTCCGCGAGCGAGTTTATCCAAACCA  
 30 ATATCGTCGGCACATTCATCTGCTTGAAGCAGCCGCGCTACTGGCAACAAATGCCGT  
 CTGAACAGCAGCAAGCCTTCGTTTCCACCATATTCCACCGATGAAGTCTATGGCGATT  
 TAGGCGGCACGGACGATTGTTTACCGAAACCGCGCCCTACGCGCCGTCACGCCCTACT  
 CTGCTCTAAAGCGTCCAGCGCAACCTCGTCCGCGCGTGGTTCGCTACTTACGGCTTGC  
 CGACCATTTGAACCAACTGCTCCAACAACTACGGTCCCTTACCATTTTCCGGAACAACTCA  
 35 TTTCTTTGATGATTCTGAACGCGCTTGACGCGAAACCGCTGCCTGTGACGGCGACGGTA  
 TGCAAATCCGCGACTGGCTGTTTGTGCAAGACACCGCGCGCACTGTATCAGTTGTTTA  
 CGGAAGTGTGTCGGCGAAACCTACAATATCGCGGCCACAAATGAAAAGCCAAATATG  
 AAGTCGTCAAAACCATCTGCGCCCTGCTGGAAGAACTCGCTCCCGAAAACCGCGCCGTT  
 TGGCGGTTATGAAGATTTGATTACTTTCTGACAAAGCCGCGCGCCATGACGTAGCGCT  
 40 ACGCGCTCGACGCGCAAAATCAGGCGGGATTGGGCTGGCTGCCTTTGGAACCTTCG  
 AGTCGGGCTCCGCAAAACCGTGCAATGGTATCTGGACACAAAACCTGGTGGCAAAATG  
 TATTGACGCGAGCTATCGTTGGAACGTTTAGGTACTGGAATAAGTTTTCAGACGGCA  
 TCCCGACGCAATGCGCTCTGAAAACCATCGCAAGGAAGAAAGAAAGATGAAGGCAAT  
 CATATGCGAGCGCGCGAGCGGCACGCGCTCTACCCATCACGCGCGGCGTATCCAAACA  
 45 GCTCTGCGCGGTGACGACAAACCGATGATTATTACCCCTTGTGCGGTTGATGCTGGC  
 GGGAAATCCGCGATATTTTGGTATTACCGCGCTGAAGACAACGCTCTTTCAAACGCGT  
 GCTTGGCGAGGCGAGCATTTTCGATTTCCATCAGTTATGCCGTGCAACCGCTCCGA  
 CGGCTTGGCAGCGCATTTATCATCGCGAAGATTTATCGCAACGACAATGTTTGCCT  
 50 GGTTTTGGCGCAATATTTTACCGTCAGTCGTTTACGCAAAACATGGAACAGGCGGC  
 ACGCAACACGACGCGCAACCGTGTTCGCTATCAGGTCAAAACCCGACAGCTTTCCG  
 CGTGGTTGATTAATACGAAAACCTTCGCGCGCTTTCCATCGAAGAAAACCGCAACGCGC  
 CAAATCCGATTGGCGGTAACCGGCTTGATTTCTACGACAACCGCGCGCTCGAGTTCCG  
 CAAACAGCTCAAAACGTCGCGACGCGCGCAATTGGAATAATACCGACTCAACCGGATGTA  
 TTTGGAAGACGCGCTCGCTCTCGTTCAAAATATTGGACGCGGTTTCGCGTGGCTGGACAC  
 55 CGGCAACCGAGAGGCTGACGAAGCCGCTTATTCTGCTCAACCGCTGCAAAATATCCA  
 AACTGCAATCGCTGCTCGAAGAAATCGTTTGGCGCAACGGTTGCTTTCCGATGA  
 AAAACTGGAAGAAATGGCGCGCCGATGGCGAAAAACCAATACGGCCAAATATTGCTGG

CCTGTTGAAAAAATAATGTTTGAGGCCGTCTGAAACCTTTTCAGACGGCCTTTAGATGAA  
 GATAAAAAGATGAACATCATTTGATACCGCCATCTCTGACGTAAAACTGCTTGAGCCCCAA  
 GTCTTCGGCGACGCGCGCGCTTTTATGGAAACCTTCGCGCAGAGTGGTTTAAAAACC  
 CAAGTCTGCGAACGCACCTTCGTGCGAGGAAAAACATCCAAATCCGCGCAAGCGGATGCG  
 CGCGGCTTGCACTATCAAACTGAAAAACACAAAGGCAAACTCGTACGGCTGGTTGTCGGC  
 GAAGTATTTCGACGTGGCCGTGATGTCGTTAAAGACTCCCCCACTTCGCGCAAAATGGGTA  
 GCGCGAAATCTGTCCGAGAAAAACAAACGCCAACTGTGGGTACCCGAAGTTTCGACAC  
 GGTCTCTATGTAATGAGCGATGAAGCCGAGTTCGTCTATAAATGCAAGGACTATTACAAG  
 CCTGAAGCCGAACAGGTTTAAATATGGAACGACCCGACAGTCCGATAGGCTGGCCGCTT  
 CAACCCGCGCGCTGCTGTCCGCCAAGACCTTGC CGGCAAAACGTGGGCGCAAGCGAA  
 AAGCTCCGCGCTTCGCTTTACCGATAAAAAATGCGCTCTGAACGTTTCAGACGGCATTTT  
 TTCGACAGCCTACTTGC CGCGCTTCAGTACGCGCTGTGCAAGAAAAACATCCCGGTAA  
 CGAAGAACGCCAAACCCAGCAGAAAGCGCGGCGATCCAGTTTTCGAGATTCAACGCGA  
 GCGGCGCATCCGAGCGCGCTTGTTGTCAGGAGAAGGCAATAATAAACGCCATAATCACAC  
 CGATCAGGCTTTCACCGACAATCAGGCGCGGAGAACAGGTTCCGATGCGCTCGGCGT  
 TTTTCAGACGGCCTTCGCGCTTTCCGCTTTTTACCGATGATGTGTTCAACACCGCGC  
 CCAACACCGCGCTGCCACGATGGGCTATTGACGGACGCGCGCAGATAAATACCCATAC  
 CGACCGCAAGGACGGCGAGGCAAGTTTGCCGCTGATGATTTTTTCAACACCAATTCGA  
 CGACGATTAACTGCTCAAATCAGATACCGGTAAAGATATAGACCCATTCAAGGTTGT  
 TGGGCAAAATGCCGAGCGATGGTCTCATCAAAAGTCGCTTGAGGGGCTGCCAAGCGT  
 GCGCGCGCTCCATGCTTTCGCGCGCATTCGCGCGGTAAGCGGTAGGCTTCGTAAAGCA  
 GTTCCACACGGGCGAAATAACACGCGCACCAACGATACAGCCGATAATCAGGCGCACTT  
 GCTGCGCGCAAGGCGTGGCTTTGAGCAGGTAGCCGCTTTCAGTCTTCGAGGTTGCTAT  
 TGGAAATCGAAGCCACGAGATTACTGCCGAGCGCAAAACAAAGTCAGTGCCAGCAAAA  
 ATTTGCGGTTAGCCTCATTCGCGCAACAAACCTCCGCTTTCGCTTACCGCAGCAAAAACA  
 GTGAAATAACGACGACGACGATGCCACGCGGAAATCGGGCTGGAAGACGAGCGCA  
 CCAAACTCGCATATAACGCGAGGCGCGCGGACCAAAAAGCCGATGACGGAAGCCAAA  
 GCGTGCAACGACCCACCAAGGCCAAGCCATGCCGCGCTAATGTGCGAATCGCCGATAA  
 AGTGGTAAAAACGACACGCTTAAACAAACATCATCGCCAGCACCCAAAAATCATAGCCT  
 TAGGCGCAAACTCTGTTCGCGCGCTTCGCGAGCGGCGCACCGCGCCAAACCTCTGA  
 ACGACATCTTCATGCTTCCACCATCGGCTTGAGCAGCATCAACAGCGTCCAAACCGCG  
 CAATGCCAATAGTCCCGCACCGGATAAAACGCACTTTCTCTTCCACAGCTTCATCGAA  
 ACGCGCCATTTCATATCGGAAGGTTGCGGAATGTGTGAGGAGAAATACGGCACGGCAA  
 TGCCCCAAGCAATCGAAATGCCAACAGGATGGCGATACCGCGCTCAGTCCGACCAAT  
 AGCCCCGCGCCAAATGCCAGTGAAAGCCCATCGGCAGCTGGGAAATTCGCGTACCGC  
 TTTTAAACCAATAACTCGCGCTGTGCGCAATCAGCGCAGACCTCCGCGCGAAGACTCA  
 TCAATCCCGCAACGACCGCGCGCCGACGCTTTGATGCGCTGCTGCTGACGGTTA  
 TCCCTTCTTCATGACCGCCCACTTTCAAAATTCAGCAGCGCCACCTTTCGCGATAA  
 GGCAAAATCGCTTTTACCACCATTTGCGTAACGCGAGGAAATGGTGAATAACCCGCCAAA  
 ATCCGCGCGCAATACATAAAAGCGTCTGTCCGAGAACGGGAAACCGCTCAGTAGCCCC  
 GCCATTGACGCAACCGGCGAGGACGAAGATGATGGTCAAAAGCTACCCGA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 50>:

#### GNMAB22R gum\_50

45 AATGAnCGGCGCAGGCTGGCGACCGGATCCATACTTTCGTCATGATTGAAGACAAT  
 CCGGACATACCGCAGCTTTGGCGCAATGTCGATTTThcCTCTATCCGGTTCGGTATCG  
 AAAAAACAAGGGGCTGTACTAGATTAGCCCTAAATCCACACCAATCCCGCAGATTAA  
 GCTGTTGAGACGGTGTGCCGAAGTTAAATCGAAATTCGCATTCTTCAAGAACCGCGGA  
 AAGATTTCAGATCGATTCCGTGTGATTTCGCAAGACGCGTTTAGTCTAGAGTCTGTATA  
 50 TTACATTATTTTAGGGTCTGCTAGCCAATTTCTGTTCCTTCATTATTTTATCTTCTG  
 AAAGAAAATTATTTTTTCCATGCTATTAAATTAATGATATGATTTTnATTTAAAAATAA  
 ATGTTTn

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 51>:

**gnm\_51**

```

5  ACAATTTCTCCTGCAGCGCGGATGATGTTTTTAAAGATATCTGCAGTGCCTTGAAGGCT
   TCGCGCGGATTCGCCGATCTGTCCAGCTCGGGGCTGTATCGGGTGGCGCTTTGAATCCG
   TCGCTACTCTCTTGCCTCAGCATACTACCGCATGTGGAAACGGTCGGCAAGCCGTTGT
   CCGGTCTGCGGGTTGTCGGTCAGTTGAGGCGGATATTTTGGSCAACGCCTTTTATGTGC
   TAGCTGTATATATCCCTCGCGCTTTGGGAGCGGGATAGCCGCCCTGTGGCCGCTCA
10  TAGCCCTCGGCGGGATGTTGTTCTGATCCGTCCCAATGGATGCGGTAAAGGCTAAATCCG
   TCACGGGATACCGGCTTCATCAGAAATCGGAATGTGAGGCATGGTTGTGCAAGGGGGAA
   TGGACTTCGTGCCCGTGATCGGAAAGCGGACAATGTAGCCGATATTTCTTTAATGGCC
   GCCTGTTGAATCATCAGGTTGCCCACTGATGGCTTTGTATTTTCCCAATCCGATATG
   ccGaCTGCGCTCGGCAAGTTCCCGCTGCTGCCGAATAGTGGTATTTCCCGTCGGGTC
15  GAAATGCTGACGGTCGAAACCTGCCGATAAAGAAATCGTTTGCCAATCTGAGGCGTG
   TGCATGCATCGGACGACACTGC

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 52>:

**gnm\_52**

```

20  GCTTGCATGCCTGCAGGTCGACTCTAGAGGATCCCGAAACGCCGTGAATCGGTCACGGC
   CGTTTGGCTAAACGTCGATTTGTGGCGGTATGGCGAAACCTGAAGATTTACAGTACACC
   ATGCGCGTGGTCTCCGAAATACCGAATCAACGGCTCTTCTCTATGGCTTCGCTCTGC
   GCGGCTGCCTGAGCTGCTGCTCGCGCGTGCCTTTGAAAGCACACGTTGCGCGGTATTC
   CGGATGGTCTGATTCTTGAAGGCAACAAATTTGCCGTCTGACCGACATTTGGCGGAC
25  GAAGACCATTGGCGGATATGGACTTTAAAGTGGCGGTCAGCACCGAAGCGGTTACCGCG
   CTGCAAAATGGACATCAAAATCCAAGGCATTACCAAGAAATATGCAAAATCGCTTTGGCA
   CAGGCCAAAGAAAGCGGCTCTGCACATCTTGGATCAGATGAAAGCGCGCTTGCGGGCCG
   CAAGAGCTGTCCGCACGCGCCACGCTTGTTCAGATGAAATCAACCAAGACAAATTC
   CCGCAAGTTATCGGTAAAGGCGGTGAAACCATCCGTTTCGATTACCGCTGAAACCGGTACG
   GAAATCAATATTCGCAAGACGGTACGATTACCATTCGCGCAACCACTCAAGAAGCCGCG
30  GATGCGCGGCAAAAAAGCATTCGAGCAGATTACTGCCGAAGTGAAGTGGGCAAGGTGATAC
   GAAGGCACTGTGGTGAATTCCTCGATAACAAATGTCGCGCGGATTTGTACGCTGTAGCGG
   GGCAAGACGGTTTGGTACACATCAGCCAAATCGCCACGAGCGCGTACGCAATGTCCGGC
   GACTACCTGCAAGTCGGTCAGTGGTGAACGTGAAAGCATTTGGAAGTGGACGACAGAGGC
   CGTGTTCGCTCTGTCATCAAGCCCTGCTGGACGCGCCTGCCCGTGAGGAAATTCGCCGC
35  GAGTAAAGCTTTAGGCTGAAAGTGCCTCTGAACAGGTTTCAGACGGTATTTTACGGGT
   ATCGGGAATGAATGGGGCTTACAGCCACAGGACGGCAAGTTTCATATAATGCCCATATGA
   TACGATGAATCCCGTCACACAGGCGGATATATCGGTTTTCGATGATTTTTTACGTTGCAAG
   GGAAAAAATGCCGATTGCTAAAAGATTGGGACGCTACCCAGTGCAAAGGCAAGCATATA
   TAAACCCGCCGTTGCCGCACTACCGCTTCCCAGCGGCTAAAGCGACGCGCTGTAAACCAAG
40  TCCGCAAGCGGACGAGCCGCAATAATTCGACCGCAAGCAGCGGGTATGAGATTTAT
   GGGTAACAGCGGTTGAGTATCGGTTTCAGGTTCCGCCATATCGGTTTCCGATTTTCTC
   GATTTTTCGCGCAAGGAAGAAATACCGCTCAAGTATAAGCCTAAAAAGACGACAGGAG
   GTTGCGCGCGGTATATAAATATCTGCAGACGCGGGTTTGGTGCAGTGAAGACCGGAC
   CTGTCCGATTAACTCCAGTATCAGGCGGATTGCGGTATAGCTGCTTACCCGTCTCTGT
45  AAGCAGCAGGATCAGCCAAAGCGGTTGATATGCGGGGGGAGTTGGAGCGCAACCGCGCT
   GCTTAATTCGCGCGCACATACCGATGCAAGTGCCTTCGCGCAAGAAACCGGATGGAACAG
   GGTGAGGAAAGTATGTCGTGGTTTATAGGCAGTTTGAAGTCAAAATTTTTTCGGGAAAA
   GGGATGATTTTCGCGCAGTCCGCGACATAGGATCGCGGAGGGCATTCGCCGTGCTGTAA
   AGTCTTGAATAAGGATGCAGTTTGCACCCCTGATTTCGATAAATTTGTAATAATCCGCGCT
50  TACTGCGCGCTCGCGGGTTTCCGCTGTGCGTCAAAATACAGGATGGTGCAGGTTTGA

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GATGCGGCGCAATTGAAACGGCCGGGTTTGCCGGTATGTTTCGGGTGCAGGCGGCAAGGA  
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 AACAGCTATAATGGCTGATTTTAACTCCTCAGCGCGCGGAGATGGAAAGCATTTCCCTTCGG  
 TCGCGGGGATTCGGATTCCGAAGCAACAGACGATACGGGATTCGGAACAAATATGAACA  
 5 CTTTGAAATTTACCAAAATGCACGGTTTGGGCAACGATTTTATGGTGATTGACCGCGTGCA  
 GTGCAGGATTTTACCCCCGAGGACGCGCGATTGCGGAATGGGCGGACCGCTTCGGGGCGG  
 TGGGCTTCGACCGAGCTTTTGGTGGTGGGCGTTTCGGAACCGGAAGCGTGGAATTTCCGTT  
 ACCGCTATTTCAATGCCGACGGCAGCGAGGTGCGGCAATGCGGCAACGGAGCGGCTGTT  
 TTGCCCCGTTTGTTCGAGACAAGGGTTTGACCGATAAGAAAGAAATTTGTGTGAACCGG  
 10 CAAATGGCGTTATTTTCCGAAATTTGCCGATAACCGGTATGGTTACGGTCAATATGGGCA  
 AACCGAAGTTTATGCCCTCTGAATACCGGTTTGTCCCCGAATCGGGCAGGGGGGATGATG  
 CCTGTATTTACGGGGTGCACTCGAATCCGGCATTCAGCCTGTCACTGCGTCAATATGG  
 GCAACCCCCATGCGGTGATTGTGGTCGATGACGTGGAATGCGCGCCGGTGGCGGAAACCG  
 GTTCGCTTATCGAAACCGCACAGGCAGTTTCCCGAACGCGTCAATGTCGGCTTATGTCAGG  
 15 TTGTCGGCCGAACCGGATTCGTTTGCGGGTGTCGAGCGCGCGGTGGCGAAACCCAAAG  
 CTTGCGGTACGGGCGGTGTGCGGCTGTGGTGGCGGGTATCCGCTGCGGGCTGTTGGATG  
 AAGGAAAAACGGTAGAGGTGGTTTTCGCGGGCGGGACTTTATATATCGAATGGGCTGCG  
 GCGCGATGTGATGATGACCGGCCCTCGGGAAGCGGTTTGAAGGTGAGTTGCGGCTAT  
 CATGATTTGCTGCATTTGGATTTTGTCTGCCTACTGTAATCGCGCGGTTTTTCTGTT  
 20 TCTGATATTCCGCGCAGGAATGTGCAATGGTTTGGGGGAGTATTATGCTGGGCTGGG  
 CATATCGGTTTGGGGGCAAGCTGATGCCCGCATATGGGAATGACCCGCGCGCGCC  
 CTTGTTTCATCCCCCATTTTACCTGACTTTGGGCGAGCATATTTTTCATCGGGCAGATTG  
 GAACCGGAAAAACAGATGGAACGGATGGCAGGACAGCCCGAACATCCGCTGCTGGGCT  
 TTTTGGCGTCAGTATGATCGATGACGCTTGCTTTTGTGCGGAATATGCGGTGTGTGCA  
 25 TTAATGCTTTTCGGGAACGGTCAAGTGTTTGTGTTTGGCGCACTGCTCAAACTTTATGG  
 GCTGAAGCCGGTTTATGGTTCGTGTTGCAAGTTGTGCTGATGGCGGTGCTCATGTCCA  
 CGCGTCGGGTATAGACCGGCACGCGCGTCAACGTTTCGGCGGCTCGCAGCTGCGCATCG  
 CGGTTTGACGGCAGCGTTGATGCAAGTCTCGGTACTGCTGCTGCTTTCAGAAATTTGG  
 AAGATAATACGGTGGCGGCTATCGGAACAAAAAGTTATAAGAAAGAAATTTGGGATAT  
 30 TGGTTTTTTAGCGGCATAGGTTTAGATAAAGCCATATCCGAAATTTGTTATGTTTCG  
 CGCAATATCCCTGCAATCGGACAGGATGCCATGCGGATTTGCGCCTTACTGTGCAAAAC  
 TTTATTATTCAGGAGCAGAAGATGAAATTTGCAAAACGATTACCGAACTAATCGGCAACA  
 CGCCTTTTGTCAAACTGAACCGCTGACCGGAAGTTTGAAGGCAGAGGTGCGGTGAAC  
 TGGAAATTTTCAATCCGGGACGAGCGTCAAGAGCCGATTGCGGAAGCAATGATGAGG  
 35 GTGCCGAAAAAGCGGGCAAAATCAACAAAAACCGCTCATTTGTCGAAGCAACAGCGGCA  
 ATACGGGTGTCGTTTGGCAATGGTATGTGCCGACGCGCTACAAGCTGGGCATTTACCA  
 TGCCGGAAGCATGAGTAAGGAGCGCAAAATGCTGTTGCGCGGTTTGGTGGGAGCTGA  
 TTTCTGACCCCTCGCGCGAAGTATGGCGGGCGGATTGCAAGCGAAATCCTTGGTGGA  
 CGCGCATCCGACACTTATTTTATGCCGCGCCAGTTGCAACATGAGGCAAAACCCGAAAT  
 40 CCACCGCAAAACACCGCGCAGAAATTTGGCGGGATACGGAACGCGCAAGTGCATGCTCT  
 CGTTGCCGCGCTCGGCACGGCGGTACGATTACCGCGTGGGCGAAGTTTGAAAAAATA  
 CAAACCCGAAGTTAAAGTGTTGCCGTGAGCCTGAAGCTTACCCGCTATTGAGCGCGG  
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 TACCAAAATTTACGACAGCATTACCAAAAGTTCGAACGAAGCGGCTTTTGAACCGCCCG  
 45 CGCAATAGCGGAAAAAGAAAGCATTTTGGTGGTATTTCTTCGGTGGCGCGGTTTGGAG  
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 TTCTTATGCGCAAGCTATCTCTACGCCACTTTTTCAGATTTGGCATAATGCTTTAA  
 TCGGATTGTGAAACATTTCAGACGCAATTTTCGGTATCGGTGTACCGCGTGGCGGAAAA  
 TGCCTTTTGCATATATGCCGAAACGCGGTTGTGTTTAAATCAGGTGTTGGGTGCGCG  
 50 GCATCGCTTGAGGGAATATTTTTTATAGTGATTAAACAAAAATCAGGACAGGCGAGCA  
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 ATCGTCTCTTTGAGCTAAGCGAGGCAACGCGCATATGGTTTTTGTAACTCACTATAT  
 TCGGGTTTTATTGGCAGGACGGTTTTTTCGCCCAACGGAAATAGGCTGCCTGCCGCTGA  
 AAATCAGCGGTTTGTCCGGGTGACGCGGGGCTTTGGGCTTTCAGACGCGATATTTTCGGA  
 55 ATGCGGGCATCTTTCGCGTGGGCGGCGAGCCGATATGGGGAAGGAGGGGATTTGTGGT  
 CGGTAAACGCAAAAAATATGCCGACCAATTGCTGGTGTGGTTCGCTGCTGCTGCT  
 GGGCAGTCTGATTGTCAGATCCGTCCCGCTCGGTTCTGATGCAATCGCATTTTGGCGGTT

GCTGATTTCCGGTGTCGTATTTTGGTTTTTAGCAGCGTTTTTCAGGCAAAAATATCCCAA  
 AACAGGAAAAACCGTCCGATATGCCCTGACGGCGGCGGTGTTCTCGCTTTGATTTGGC  
 GTTGTGGCAGAAAACATACACGCGGTGGGCGGGTATTTCCACCTGCTCAACAGCCT  
 GCAAAATCTTTTTCTTGTGCGCAATCGGTGTTTTCTTTTTTCGGCAGAGCGTTTGAGCGGGCT  
 5 GAAAAAGCAGGCGTTAATATCGGCAGTTGCGGCGGTGGCGATGATTGCCGGTGGGAATT  
 CGCGCTACACCGGTAAATCGCGTTTGGGATTCGCCAGCGGTTTGGTATCGGGAATGATGCT  
 CGCCCTGTCGATGGTGTGTTGTCGCAAAACCCATGAATCGAGCGGTGGCGGTTTTGCC  
 TTCAATGATGATTTGAGTTTGGCGCGCGGTATCGCTGGTTGTTCCGCGATTCGTGAT  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 53>:

## gnm\_53

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 25 AACAAAAACAGTACGGCGTTGCCTCGCCTTAGCTCAAGAGAAGCATTTCTCAAGTGC  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 54>:

#### gnm\_54

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 ACCTGTATGGCCTTGATTTTTCCTTATCGACAACTTTACCGAACACTATATTTTTCG  
 CAATTTTCGATTTCATCTTATAGCTGAGACAAATATTTCAGTTTGTCTCGATGGCTG  
 25 GATTATCGCTCCAGGGGATTTTCAAAATAAACTGTTGGAAATATTGTTGATACCGACCA  
 CTCGCGTATAAGCTGGGACTGATAGCTTTTCAATAAATCTTGTATGAAGGATATGG  
 CATAGAGCTGATAATGCCGAGTATCGCGACGACTCATCATCTCAATCAATGAACCC  
 CTTTTGTTCATTTTATTACTCATCATTTAGCTTACATAAGATTGAAGGACGACCAAG  
 GTATTGGCATCTTACCCEAGCCTTGGCAGTAACCGATAAACATTTCCTCGTCTCTTC  
 30 ACGCCCAATATTCGATAATATAACGTGGCATTTCGTGACGCTTCCTGTCCTTCTTAT  
 TATTCATCCCTTCTGTGCAATGCACAGGTGGTAGAATTTGACGGGCAAGAACGCTTC  
 ACCGCGTCAACGGTGGGCTTGCTTGCACCAAGATATTGTCAAAAGCCTTCTCATATATCA  
 TTATTTTCCGCACATTCACTGCGGCACACAGACCTTTTCCACAGTTTCGCTAAATGTAT  
 ACCCTACTGTCCGATCATATTTCCAAATCCAAACCTGAAGTTTCGCTTCGCGCAAGCG  
 35 GCGCTCGGCCAAAGACAAAGCAATTTCTGTCTGATTGCTGGCACTGATCCGCTGCTCG  
 GTATTGTAAGACTGCGCGGCGATTACAACCAAAAAGCCACGACGATCATCAACCATCAGC  
 ACGATAAACAGTGCAAACCCCTCTGTCGTCAGAACGCGGATTCCCGTCAAAGTGTTC  
 TGTTTGCGCATACATTTCCCGCGGATTATGTCGATCGATACGGTAAGCATAAATATGAT  
 TGTCTGAAGAAGCGGCATCTTGGTATCAGTACCGCTACTCAATAAAACCTGACCCCGG  
 40 CGGCGTAACAGCATTTTGGCGCTGTGCAATTTATCCGATATTTGAATGTTTCCTCTT  
 TGCGGGCATCGTCATCTTCAGGACAGCGGGAACATAGATATACCGCACTTCATATGTC  
 TAACCTTTTACGAGCACTGAGGATTACCCCACTTGCCCTTATCATCCAATTGGAAGC  
 GGAACAACCTTCTCATCGGCAATCTCGCGACCGCATAGGCATTGACCAATGCTTTT  
 GACGCGCTATATGCCATTTTGCTCCTTATCTGATCGGGAATCTTCAATTCCTTTTGTG  
 45 CATCTCTTAAAGTAGGGATTTCGTTGCCCGGTTTCGATATGTCGCGCACAGCTGTCAGCA  
 CGGTAGTGC CGGTGCTGTCATTAACATCATGATTCCGTATTGAAAAATCAATGCGCTAC  
 CAACCTGGAAAAAATCTGATAATTGATATTTGAAGATTCCGCTATGGGAATAAGTTTAT  
 CTATACCTTCTCTTTTAAAGAAAAGGGAATTTTGTGCGCTGATCGGGAATAACAT  
 CAGTTGCGAGTGTCCGACATATTGAAACAAACGAGCGGCTGCCATCTCCGATATACAT  
 50 GGACAATCAATGTGCGGCATTCCGCAATCTGTTGCGCGCAAGACGCTCGTTTGGCG  
 CATCATTTAATTTCCGGGATGTGAAGTAACTCGATCCGACCGCATCAGGACAACTATAC  
 TGACAGGCGCCGCAACCAAAAATCAATATGTTGTAACCTTTTCATACCATGATAACTGC  
 CTATTTGTGACGTTAGCATTTTAGCTCTCATTCGCGACCTCCGACCTTGCCTGATAGT  
 ATATACGATAATTGTCGCGCTCACTCAAGATTTCGACGCGGAATATCCGAATCCCGCTG  
 55 CGAATCATTTACCCACAATCTTAAATTAAGTATCCCGTTTGCCTTATTTGTCGCAAT  
 TGAAGAAAAGCATTGCGCGCAATGTGCGCGGCTTACCCGAGATCTTCGACAGCGC  
 GTAATGGATGGCTGCCGCTATCCGCAAGGCATTTTCAGCTCATAACTAAATCTCTTCAA

TTGTGCTCTG6CAATTGCCCTTAGTTTTCATGGCATCAATCGCAAAATGCCCATCCAC  
 AGCTGATAGTCTATGGTTTCCCATTGAAAGATTATAGTTTTCTTGTGTGCTGTCCGAATC  
 AATGGTCGGATTATCAACATTCCCTCCATCAGGTTTTCGGTATTTGGCTGACGATGGT  
 TTTGTTCTCCGCTCCCTGACGGAAGCGACTGTCCGCAACTGTACAGACAATAGTGCCAA  
 5 AATACCGATGGTCAGAACGAGCATAGCAACCAAGACTTCTACAGCGCATACCGGACTG  
 GGAATCTTTTCAGGCGGAAGCAATCATATTTCTTCATATTCATTTTAAACACTGAAACTGT  
 TATTTATCTAGGACATAGTAGCGCGATACCCCTAGGGCAAACTTCGACCTGCCGCTG  
 CTGTTAATCAAAACACCAGCGCGAAGCAATTTCTTTTCATCGGCAAGAAACCCCTTCGCA  
 TCTGTCAACACGATTTGGATATAACCGTCAGAAATAAAAAAGCTGGATTGTTTGTGAAGA  
 10 TGTGGTCTTTCGTATAACCGAAGCTCCCGTTTGTATTGAATGTCCAACTACACGGCTCG  
 GTGGTCGGCTGACTCTGACCGAAAGCGATATGGTTGAAGGCATTAATTAATCCGCTTATCA  
 TTGATATCATCATTTCAATACCACACTCGCGAGAAGAACATCCTCCGTATCATTTGTCTAT  
 CCCATTATGCCGTTTTTGTGCGCGAAAGCCCAACATCCCTGCCCTTCTTTCGCCGGAGTCA  
 CATTTATTGTTGGGCGTACCGTCTTTTAACTTGAACAGGACAGATATAGACAGGGAGA  
 15 TTGAGCGGAGCGGCTTCGCCCTTGAGAAACGCAAAAGGTTGGCAATCCGCTCCGCGTGA  
 CTGGCAATCGCGCGGATGCAATCCATTGGCTCATATTGGGAGGGCTATCATCGCCATA  
 ATGGCTGCAATGACCATCAGATGAGCAGCTCTGTAGCGTGAAACCTTGTGTGTTTCGT  
 GTACACATAAGCAATAGAACGTTAACTGGTAATGTATCGGATTAAATCAACACGCGTGA  
 CGGCGTTGCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTCAAGCACCAGTG  
 20 AATCGGTTCCGTACTATTGTACGCTCTGCGGCTTCGTTGCTTGTCTGATTTTTGTGTA  
 ATCCACTATATTTCAATTATATGCGGGCTGAATGCAAAATGCCCTCAAGACCGGTTTT  
 ATTTTITAGGGCAATCCTCAGCATGATTTTAAACGATTTTGCTGATTTCGCTCAATAAA  
 ATTTTATATAGCCATTTAATCCTCTATCTTTGCTCCTCGGGAATATAGGCAGCATGT  
 CGAATTTGGTGAATTTGCCGTCATGTAGGAAGATTTTACGACGGGACCGTTGCGGT  
 25 GTTTGCGCATGATACATTTCGCAAGGCTTTTCATGGGTGAGTCTGGTTGTAGATTTCGT  
 CGCGGTACATGAACATAATCAGTTCGGCATCTCTGCTGATTCGCGCGGACTTCGCGAAGT  
 CGGACATCATGGGCGGTTTGTGCGTAGCGGATTCGACCGTGGCGCTCAATTTCGCAACGCG  
 CGATGATGGGACTTCAATCTTTGCGCAACGCTTTGAGCGGAACGTGAATCTCTCCCA  
 GCTCGAAGCTCGGTTGTGGAACGCGCGGATCTGCGCATAGTTCGAGGTAGTCGATGA  
 30 CAATCAATCCAAGCTTATGTTAAATTGACGGCGAGACGGCGGACGGGCGCGGCTTT  
 CGAGCGCGGTGACACCGGGGCTCTGTCGATGTACACGGGCGGTCGGAGAGTTTGACGA  
 CTGCTTCGTTTCAGGCGACCCAGTGTTGCTCTCGAGCTCGCGGTTTTCAAAACGCTTT  
 GATCCAACCGTCCGACGAGCGAGCATACGCATGACCAAGTTCGCCCCCGCCCATTTCCA  
 TCGAGAAAACGACGAACGGGACGCTGCTTTCTACGGCAACGTGTCGGCGATTTGATAG  
 35 AAAAGGCGGCTTACCATAGACGGACGACCGGCAACGATTAATCAGTTCGCGGTTTGA  
 GACCCGAGGTTTTTTGTCGAGGTGATGAACCCCGTCGGCAGCGGTAACCTTCATCGG  
 GATTGTGCGCGAGTAGAGCATATGATCGCTGTACGACTCTTTCAGCAAAATCGGGCA  
 TCTCCAAAAGCCCTGCTTGGATTGCGCGGTGCTTTCGGCGATTGGAATACTTTGTTTT  
 CGGCTCGTCCAAAAGCTGCCCGGCTCCCTGCCCTTCGCGATTGTATCGCTGCGGGCGA  
 40 TTTCCGTCCCACTTCGCGAGTTGGCGCATATGGAACGCTCGCGACGATTTTCGGGT  
 AGCGGCGGATGTTGGCGGACAGCGGGGTGTTTGGCCAGCGTAATCAGATATTTGCAATC  
 CGCCTCGCGCTTCCAATTCTCGTTCCGCTGCAATCTTCTGAAACCGTAAATCAGATCGG  
 CGGAGCGGCTCATTAATCAATTGGCAATGGATCGGAAATCAGGCGGTGTTTCATCGG  
 45 GGTAGAAGCTTTCACGGAAACCACTCGGCAATCTGTCCCATGCCGGATTTTTCAGCA  
 TCAACCCACCAAAACGAGATTGTTCCGCTCCATGAGTGTGGGGGACAGACAATGCGG  
 GACCTCACGCTTTCAGACGGCATGGCTGCGTAATCGTTTCATGGTACATCCTATCTGTC  
 GTGCCGAAATTGCAATCTTATTATAGCGTAAGCAGGTTTAAATGGTTTCGCAACGCTG  
 AAACAGGTAGAATACAGGGCTCGCGAGTTATTGACGACAACACTGCCAAAATACAAACA  
 TTTAAACCAATATTACGAGTACAAAATGAACATAGCTGCCGCAACTGCCATTATGAC  
 50 TCGACCGATTGTCCCGCATCTGACCAAGAGACTTTGGAGTTCCACTACGCGAAACACC  
 ATCAACCTACATCACAACCTGAACAATCAATCAAAAGGACCGGAATTTGAAAACCTTGC  
 CTTTGAAGAGATTGTGAAAAAATCTTCAGGCGGCTGTTCAACAACGCGGCAACAACT  
 GGAACCAACCTTCTACTGGCTGGGTTTCACGTCAAAAGTCAAGGCAAACTTCGCGGCG  
 AACTGCGCGCGGCTTCGACGCGAAATGGGCGAGCTTCGAGAAATTCAGAAGCGCTTCA  
 55 ATGCTGCGCGCGGCTGACTTTGCGCTCGGTTGGGCGTGGCTGGTAAACAACTGCCG  
 CGGATTGGATTGGTTTTCTACTTCCAACGCGCTACCGCGCTGACCACTGAAACACGCG  
 CGCTGCTGACCTGGAGCTGTGGGAACACGCTTATTACATGCACTACCGCAACACGCGTC

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CCAACTACCTGAAAGGTTTTTGGGAAATCGTCAACTGGGACGAAGTCGCCAAACGTTTTG  
 CCGCCTTGTCTGATTTTTGTAAATCCGCTATATCATTTCCGGTAGATTTTTGCGGTATT  
 GAATTTGAGTTATTTCCGATAAATGCCGTGTGCTTTTATTCTAGATTCCCACTTTCGT  
 5 GGGAAATGACGGTTCAGTTGCTACGGTTACTGTGTCAGGTTTCGATTATGTTGGAATTCGGG  
 AAACCTTATGAATCGTCATTCGCCGCGAGCGGGAATCTAGACCTTAGAAACAACAGCAATA  
 TTCAAAGATTATCTGAAAGTCCGAGATTCTAGATTCCCGCTTTCGCGGGAATGACGGAAA  
 GTGGCGGGAATGACGGGATGTAGGTTTTCTTAACCTGCGTCTTAGATTCCCGCTTTTTCG  
 10 GGGAAATGACGGAAGTGGCGGGAATGACGGTTCGGGCATTCTCTAAATTACCCGTTGATC  
 GCTGTAATCTTAGAGATGGCGGAATATAGCGGATTACAAAAACCAAGTACGGCAAGGCG  
 AGSCAACGCCGTACTGTTTTTTGTTAATCCGCTATAATTGATGAACGGGTTAAAAAAGT  
 GTTGCCATCGCCTGTTCTTCTTGTGCGATACGCTTAAATAAGACCAGCAATAAATTGGG  
 AGGCCAATCAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 55>:

#### 15 GNMB42F gnm\_55

TGACCCGGCATTCCTTCTCGCTGCGTTCGTGGACGCTTTTTTCAAATTCGATTCCGC  
 CGTTTTCGTTTTTCGGAAACACGATTCGCCGCGAAGATGAGAAAACAAACGTTTCAACA  
 GTTTTCGTCACGGCGCAACAATTTCGATATCGCCTATCCTGCTTTTGCTGAAAAATTTCATG  
 20 GAGCAGGTTTTCTTTTCTTTGTAATTGTCGGTTTTGACGGCGAGGATGCGTCCCAATCC  
 GGCACGTTTCGCATAACCGTTGTTTTCCAAATGGCGCATTTGCGCTTCAAATTCGTTAC  
 ATCCGAATGCCGATTTTATACACGCCCTTGATGACGGTTTTnATCAGATAGACAATGCC  
 TGACTTTTCCATATCGATGTTTTTCAAGTGTTCGAGCCTTCAGACGGCATCGGATTAT  
 TTTCTATGCCGCTCGAAACCGTTTAAAGTATCAAAATATTCGACACTCTGGCCTGnAGCG  
 25 CGCGTTGATGTGCGGTTTCATGCGTTTGGCGGCGAAATnTCGGTGATGTCGCCGAGTT  
 TGGCGG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 56>:

#### gnm\_56

CCGCACTGATTTCGAAATCGGTACATATATCATCAGCGCGGGCGGCAACGCCTGCGTC  
 30 CGCTATGACGATTTTGGCGGGTAAGCGGTCGGTTATGATGACGAGAACTGATTTCCG  
 TGAGGCGGATGGTCAGTTTATCCACACTTCCACCCTCTGCACGACATGTCGTCGATG  
 AAGCGATTTGCGCCGTGGGCGGGCAACGGCAACAATCTGTTCCGCAATCGCGCGGCTG  
 TGTGGTTGGCGACTTTTATACACGCGCGCTTTCACTGATGTTGCGCTCGGCGAGTA  
 35 TGCCGTTTTGGAAGTGATGGCGGATGCAACCAACATTATGCGAGGGCGAAGTCATGC  
 AGCTGATGAACATCGGCAATACGGACATTACGGAACGAACAATATATCCAAGTCATCCAA  
 TATAAACCGGCAAAATTGTTGAAGCTGCGGCTCAAGTCGGCGCAATTTGGGCAAGGCT  
 TCCCCGAACACGAACGGGCGTTGAAAGACTACGGTATGATGTCCTACGGCATTCCAA  
 ATTATTGACGATGTGCTGGACTATTCTGGCGAAACGACGAACGGCAAAAATCTCAGGA  
 40 CGATTGGCGGAAGGAAAACGACTTTGCCTTTGATTATCTGATGCGTCAGGGTCCGAA  
 CA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 57>:

#### gnm\_57

GGCTGCTCGCAGGAAGATGTCGGGGCGGGTTTGGAAATGTGCGACGGCGGCAGGGTCGGC  
 45 AATGGCGTCGAAGAAGTGGGTGAGCCCCATGCGTTCCAGCAGGAACGGGCGTTTTTACT  
 GCGCGACGCAAGGGCGATTTTTTGGCGTTTGGCCTCAATGCTTCCAGCAGGGGCAAAAT

GCGGGGATACACGCTCTCGGGTTTGACTGCCTGAATCATCTCGACGTAGTTGTCGTTTTT  
 ACGGCGGGTCAGTTCCGGCGAAGCTCGGCTTCGCTGACGGTTTGCCGCCGTCGGCGAGGAT  
 GCGTTTGAGCGAATCGTCGGCGGACACGCTTTTGAGCTGCTCGTTAAACTTGCGGTCAAT  
 5 GCTGATTGCCAGTTCTTCGGCGAGCTTTTCCATGCGCGGTAGTGGTATTGCGCGGTGTC  
 GGTGATGACCGCGTCGAGGTCAATAGGACTGCAGTGAAGTCATTTTGGCCCTCTCTTA  
 TTTTCCAAACGCAACGGTGTGGCTGCCGTGCGAGCTGATGTCTTTGCCGTACACCTGC  
 AATCGAGCGACTCGCTTTGAGCAGGTGAAGACGACGTTTCTTTGCCGACGCGGACTTT  
 AATCAGACGCGCGCGGTAGTTGATGTGAAGCGGTAGCTGTCCACGCACTCGGCAAGAA  
 CGGTGCGAAGCTGAGTTTCCCGCCACGCTTTTCATTTGGCGGAAACCTTGGACGATGGC  
 10 GAGCCACGAGCGCGTCATGGAGGTGATGTGACGCCGCTTCTCGGTGTCGTTGTGAGTT  
 GTCCAAGTCGAGCGGGCGGTGCGCTGGTACATTTCCACGGCTTTTCTCTTTGCCCGAG  
 TTCGGCGCGAGAAATAGAGTGAATACAGGGCGACAGCGAGCTTTCATGCACGGTCATCGG  
 TTCGTAGAAGTCCGAAGTTGCGGCGTTTTCGTCGATATTGAACCGGTGCTGAAGAAGTA  
 GATGCTTTGCAATACGTCCGCTCTTTGATAAAGGCGAACCGAGGATTTTGTCCACGA  
 15 CCAATTTTGGTTGAGCGGCAAACTCGTCGGCGGAAAGCGGAGACAGGGGCGGATGTCTT  
 GTCGAGGAAGCCGTCTGTGCTGACGAATACGCCGAGTTCTTCGTATGCGGACGGTACAT  
 ATTCGCGCTGATGTCCGCCCAATTTTCCAACCTCGTCGGCAGCAGCTTCAATTCGGAAGC  
 CCGGTATTTCGCCAAGGCTTCGCGGTGTAGTCCAAATCCCATGCGCGAGGCTGTGCT  
 GTACCAAGTTGTTGTGATGTGTTTTGATTCGTTCGGACCGGTTACGCGGTGAATCAT  
 20 CTAATTTSCCGTTGCGTTTGGAGAAGTGGAGCGGTCGCGCCGAGAGCGGACACTTCGAC  
 GAAACCTTCCAAGCCTTCTTTGGCAAGATAGCCCTCGTCGCGGTGAGTTGGTGTAGTT  
 GTAGATGCGCTAAGGAATCGCGCGCTTTCGCGTGATTTCTCGAAGGTGATTTCCCAATTC  
 GTTGTGCGCACTCGATGCCGCTAAACGTTACCATCGGATAGAGTGCGCCGCGCAAGCGCT  
 25 TTCGCCGCGCTTGTCTGCCCTTCGCCGAGTTGGTTGCGCGGTATTGCAAGAGGTGTCCG  
 GGTAACTTTCGGGTTTCGCCCACTGCGAGGTAGAGCGGTACGGCTGAGCTTCGCTGCCA  
 ATAGGTGCGCGCGCGCTATTTTTCGCCGGAAGACCTTTCGGCGGATGTTCAGTCGCCG  
 GTCTTCGCCGCTAGTAGGTGGAGAACAATTTGGAACAGGTTGAAGCGGATGCTCCTGCTGCG  
 TTCGTGCTGCTTCGATGACCACTCGCGGATTTCCCAACCGTGCAGCCAGCCTGCTTT  
 30 CTCGCCGCTCCAGCAAGGTTTCAACGCAACCCCTGCAATTTTTCGCAAGGCGCGGCG  
 TCGCGCTTTCACGTCTTCCAAGCTCTGATAATCGCGGCTGGTGAACAACTACGCGGTTT  
 TTTCAAAGTTTCGGGTGTGCTGCGACTTCGGAATCAAAAGAAATTGAGAACCTGCCAGTC  
 GGTTTGGCTGCGCGGAGGCTTTGAACTGCGCGCAAGGTTTGTCTCGCGGTGACGAT  
 GAATTTGTCACGCCCAAGGATTGGCGACGCTTTGGCGCGCAATGTAGGAGAGACTGTCT  
 35 TGAACGCGCTTGTCCAATACCTGCCAGAATTTTCTTCGTAGTTGGAGTCTTCGTTTTT  
 CACGTGCGCATCGATGATGGAATCGATGCGACTTTGGTGGTTTACCGTCAACGGATAC  
 GGCTTCCAGCGGATGACCGCCAGCTCTTTTGTGCGACAGACAGGAATTTGCACCAATT  
 GAAACGCACACCGAATACGGTGAACGAGCGCGCAACACGCGCTGCTGATATCGACTTC  
 GACGAGAAGCGACGCAACGCTCGTTTTCGCCAAGTCCACTTCTGCCCGTCGACAAAGAT  
 40 TTTGACTTTGCTGAATTTGAACGCGTTGATGCGTTTGGCGAAATTTGGGATAGCGGTT  
 TTTCCACCACCGCAGCGCGGTTTGTGCGGGAACACAGCGCGGATGATAGTGGCTAA  
 GTGGCTTTCGCGGAAATAGGTTTCTCAAAGCTGCGCGCATACCATATAGCCGTTGCG  
 CAGCTGGTCAGGCTCTCTTGACGCGGTTTGTGTTCTTTTCCAGTTTTCGCGAAGCGAG  
 45 GCTCAAGGGCTGATTTCATGATTCTGTGTACATTTATGAAGCTCCTGTTTGGATTGA  
 TTTGAGGGAATGCTGAATCTTATAGTGGATTAAACAAAAATCAGGACAGGCGACGAAGC  
 CGCAGACAGTACAAATAGTACGGAACCGGATTCACTTGGTGCTTCAGACCTTAGAGAACT  
 GTTCTCTTTGAGCTAAGCGGAGGCAACGCCGATACCGGTTTGTGTAATCCACTATAA  
 AAGTCTGCTGCAACCGGTGTTAGGAAGCTCCTAAGAAGGATTTCGATGCCGTAGCAACT  
 50 GTCGCTCCCTGGTATCACCTTGTTCAGACGAATATGCGCAACTCGGCGCAATTACG  
 CTGTGCGCGAGCTCTGCGCTCGTCCGACGCGGCTGTAACGCGCCGATCTGTGCGCG  
 GCGAAATCTGCGGGGCGCGGTAAAGATGACCAAGCCATTGCGGTGCTGTATATGCTGT  
 ATGACGAGCGCGCGTCCGGTTGCAACACAGCGCGGAGCGCTATATCGGACGCGCAG  
 CGCTAAGCGCTCGTCAAACCGCGCCGACCGTTTTCGCGCGCAGGCGCGCAACGGCGGA  
 TCCAGCGGCTTGGCGCGCTGAAATCAAATACTTCGAGGTGCTGTAACCGGTTGAGAGC  
 55 GGCAGTTTTCGCGCATCGCGCGCATATGTCGCCCTGCGGAATATGCAAGAACCGCATG  
 TCGAGGCGCGCGTCCAGCGCGCATGAATGTGACGCTCGGGTGAACACCGGTGTCGCCG  
 AGCGCGGTGCGCGATAGCTAACGGTAAGCGGATGCTCTGCTCAAAGCGGTAGGAATA  
 TCCAAATCCAAATCGTTGGGATAACCGTCGGCGCACTGTTGACAGCGGCTGCGCGACAC

ACCGAAACGGCCGCTCTGCCGCCACCGCGTTGAACGGGTAACGGCCAGCCCGTGCGAACCC  
CCGTCGACGCCGCTTCTGCCCTTCGTTGGCCCTCCACGGCGGTAAGTCCTGCCGCTTGATGTGCG  
AACCCGCCACCGCGGATGGTTCGGCCACCGCCCTATCTGTTTGTAACTCTGAACCGGA  
5 TTTGCCGATAGGAAGCCGCATCATCGAACGACACACAGAGGTTTCGCGCACCGCCCTCT  
GCGAAACCGGAAATTTCTGCACAATCCCGCCCAAGTCACGACGACGACGACGATACCA  
CGCCGCTTGGACAGCAGATAGCCGCTTACGGCACGCCGCTGCATCAGACCGAAATCGCGG  
GTAGCGGGGTATCGCTCATCGCTCAAAACCCGCCGCTGTGTTCTTTAATCAGGAACAAG  
GAAACCGCGCCACGAGCAGGACGACGCCCTTACCAGAAACATATGTGGCTTGCAGCGC  
10 CCAGCATAGGGAAGACGAGAACTCAACAGCGAAGCGACGATTTGAGGCATACAGATA  
GAGCCGTTAAACAAGCCCAAGTAAGTCGCCATATGCTTGCCCGCAAGGCGGTTGGTCACA  
ATCGTCAGCGGATAAGTGATAATGCCGCCAAGCGATGCCGATTAAGGTATATAGACAAC  
ACCAGCGGGGTATTGGTTGCCGATGAAGAAACGGAGAAAAAGCCGAGCGGCCCAAAGCC  
AAACAGCGGAAATACCCGCCCTTATGGTATTTATTCGGCACTTTCGCCAATACAAACGAA  
15 CAATCACCCGCGCAACCGACTGCACCGCCGCCAAACGCGTACCACTACCCGCTCC  
TGATAACCTACGGAAGACGATCGTGGTGTGCCAGACGTTTCGCGAATCGCGCTGCC  
GAGTAAGTCCACATATATTGGAAGCGGAACGACGAGAGAAGATTGCACCAAGATAACCGTC  
CAAAACGCCCTTAGCGCGGCTTTCAAGAGTTCGATCCAGTTGGCTTTTCTCGATTTCGCG  
CGGACATCGATGCCGTGGTACGGGCTAGGTTTCGGATCGTATTCCTTCACTTTGAA  
20 ATCGTGAACGCGCTGGTAAATCACAGCAACGCCACCCACATAAACGCCACGACGACG  
GTCTCGCGCAACGCCCTTCTCGCGCGGTGTCGCGCAACCGATATACGCAACACAAAC  
GCGCAAGATCGCGCCACGACGCGCGCCGATTTGCTAAGAAACTTTGAATCCCGTAGGTC  
TAGCCTTTCTGCTCCTCGTTGACCATGTGCCGACCATCATCTTAAACGGCTGCATCGCC  
ATATTTGACGACAGCTCTAACAGCGCAATCATCAGCGCGCGCAACGACAAAGCGCGCAGC  
25 GACGATAGCCGAAACCGAAGTCGCCGAGTTTCGGCATCAAAATCATCAATTAACCGCA  
ATCAGCGTGCATAAAGCAGATACGCGCAGCGCGGCCCGCAACGCGGCTTCCAAAGTC  
CGGTCGGAGTAATGGCGCAATCGGCTGCACGACATCCCGCGCAGCGCGCGGAGGATG  
GAAACACGACCCAAATTTGCGGGCTGCGGCTAGCCGTTTGAAGAAATCGCGCTATTTGC  
GAGCTTTGCAAGGTAAAGGCCGTCTGAACCGCGAGAAAGCGGAAACTGAGCATCCAAATC  
30 GTGCTTTTTCGCGCGCGGCAAACTTGTGTTGCTGTTGAGGCGTATATTCCGACATA  
AGGTAATCTCTTTTGTATTGAAAGATAGTAGATTAAACAAACAGTACGGCGCTTG  
CCTCGCCTTAGCTCAAGAGAGACGATTCTCTAAGGTGCTGAAGCAACGATGMAATCGGTT  
CCGTACTACTGTACTGTCTCGGCTTCGTGCGCTTGTCTGATTTTGTAAATCCAATA  
TATTTGCTTTGGAAAAACCGAAATGGTTGCCGGGCGGCGCATCCCTATCATTTATTTATTT  
35 TTTTGTCTATATAATTTCAAAGGGATAAGCGGATTTATGAATCCTGCCCGGATTTGGCA  
ATACCGTTCGCGGATAAATCGGCTTAAATCAAAATATCGGTTAAATGGCCGTGAGAA  
TTGTTTGTATGAAACGAGAAAAACCATGTCCCAACAATACGCTCTATCTATGCTTGGCGGT  
GAGCAAGGTTGTGCGCGCGCAGAAAAACCATCATTAAGATATTTCCCTTTCTTTCTTCCC  
CGCGCGGAAAAATCGGCTGCTCGGTTTGAACGGCGCGGCAAGTCCACCGTCTCGGAT  
40 TATGCGCGGCGTGGATAAGGAATTTGAGGGCGGAAGCCGTCGCGATGGGCGCATCAAAAT  
CGGCTACTCGCGCCAGAGCGCTGAGCTTATCGGAAAAAACCGTGCGCGAGGAAGTGGA  
AAGCGGTTTGGCGGAATGGCTGCCGCGCAGAAACGTTTGAAGAAAGTATGCTCCGAGTA  
CGCCAACTCTGATCGGATTTTGAACGCGTTGGCAGGAAGCAGGCGCGCTTGAAGCGAT  
TATTGCGCGAGTTCTGTCACGGGCGGCGGTGCGGAACACGAATTTGAAATCGCGCCGGA  
45 CGCGCTGCGCCTGCCGGAATGGGATGCCAAAAATCGATAATTTGTCGCGCGGTGAAAAACG  
CGCGGTTGCTGTGCAAACTCTGTTGAGCAAGCCGATATGCTTTTGTGTCAGCAGCC  
GACCACCACTTGGATGCGGAATCGGTGAGTGGCTGAGCAATTTCTGTCGCGCTTCCC  
CGGCACAGTCGTTGCGGTAACGACGACCGCTACTTCTGCACACGCGCGGAATGGAT  
50 TTTGGAATCTGACCGCGGCCATGCTATTCGTTGGAAGGCAATTTACTGCTTTGGCTGGA  
CGAGAAAGAAAAACGCTTGGAAAAACGAGGCAAAATCCGAAGCGCGCGCGTGAAGCGGAT  
GAAGCAGGAATTTGAATGGGTGCGCAAAATGCCAAGGCGCGCAAGCCATGCTCCAAAGC  
CGGTTTGGCTCGTTTGAAGAAATGAGCAACTACGAATACCAAAAAACGCAATGAACGCA  
GGAAATCTTTATTTCCGTTGCGGAGCGCTTGGGTAACGAATGATTGAATTTGTAATGAT  
55 TTCCAAATCGTTCCGCGATAAAGTGCTGATGACGATTTGAGCTTCAAAGTGCTCGCGG  
CGCGATTGTCGCGCATCATCGGCCGCAACGCGCGGTTAAATCTACGCTTCAAATGAT  
TTCCGGCAAGAGCAGCGCTGATTCGCGGAGGTGAAATCGGCAACCGCTGAAATGAG  
CTTGATTGACCAAGCGCGAAGGTTTGAAGAACGAAAAACCGCTTGCACAACTATG  
CGAAGGCGCGACATTTTGCAGGTTGGTCAGTTTGAATTTCCGCGCGCAATTTTGGG

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GCGTTTCAACTTCAAAGGCAGCGACCAAAGCAAATTCAGGTCATTTGCTGGCGGCGA  
 ACGCGGTCTGCTGCATTTGGCAAAAACCTTTGTAGCGGCGGCAATGATTGCTGCTGGA  
 TGAACCGTCTAACGACCTTGACGTGGAAACCTTGGCGCGTGGAAAGACGCATTGTTGGA  
 ATTTGGCGGAGCGTGATGGTGATTTCGCAGCAGCCGTTGGTTCCTCGACGCATCGCCAC  
 GCATATCTTTGGCGTGAAGGCGACTCTAAATGGGTGTTCTTCGACGGCAACTATCAGGA  
 ATACGAAGCCGACAAGAAACGCCGTTTGGGGCGAAGGCGCGAAACGAAACGCATCAA  
 ATACAAACCGGTAACGCGTTAACTCCGAAACAAATGCGCTCGAAAGGCTTCAGGCGCG  
 ATTTTACAAAGCAGCACCGCTTTAAACAGCATTGCAATCCTCAAGCAATCAAAGTCAT  
 CACCGCAGCCGCCATATCGTCCGCCATAATGCCAAACCGCGTGCAATTCTTGTCAA  
 CCAACGACGGGAGACGGTTTGGAGCGCTCAACAGACGGAATAGGACAAATCCGCCAG  
 CCACCACTGCTCACTGAAACGCGCAAAACGCCAGCACAACAGCATGGCGACAATCTCGTC  
 CCAAAACATCCACCGTGGTTCGTGACACCGCTTTACGTTCCGCATAAAGCGCAATGCG  
 TATGCCCCACATAAACAGCAGCATACACAAAAAGCCAGTAGCCCGCTCTATGCGGAG  
 CAAAAACGACACAACGCCAAAGCAGTGCCGCGCAAAAGTGCCGAATGTGCCGCGCGAA  
 CGGAGCCAGCCGCTGCCGAAACGAAAGCCAAAAACACAAGCCGCTTCAACAGCCA  
 CGCAAGTCAGGTTTAAAAACAGCCAAATGATCGAATC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 58>:

#### GNMAB61F gnm\_58

CGGTCTTGGCGCAGCGCGnTCTTTCGGCATACATCACGCCCAAATGTTTGGGCTTGG  
 GCTACCCCTCGCTGCGCGCTCGCGAAACCATCTGACCGCTTCGACATCGTTTGGCGC  
 ACTCCACGCTCTCGGCATATATACGCCCAAATGTATTGGGCTTGGACAACCCCTGCG  
 GCTGCGCGCTCGCGATACCATCTGACCGCTTCGGTATCATCTTGGCGCAGCGCGCGCT  
 TGGCATACATCCAGCCCAAATGTATTGGGCTTGGGCTAACCCCTGTTCCGCGCGCTGCG  
 GATACCATCTGACCGCTTCAGCATCATCCGCGCGCAGCGCGCTCTTTGTAATACATTGC  
 GCCCAAATGTATTGGGCTGCTGCATTTCCCTGTGCTGCCGTGCAAGTTTCCCGAATA  
 TCCGATACGTATCCGnCCACACCGCTCGGTTCAAGCCCAAGGCAATCAGGCGCGCGCA  
 AGCAITTTGACTGTCTGTTTCATGGTTTnACTTCTGTTTTAGTATAAGGCGGGTTTCAGCC  
 ACCGnTAACGATAGGCTGGCGGATT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 59>:

#### gnm\_59

GTACCCCTGCTCAAGCAGTACAATCCCGAGTATTCGGGCATTTTCATCATTTTTTAAGACAG  
 GAGGGAGTGATTGTAACAAGTCTGAATTGATCGAAGCGATTGCTCAAGAAGCCGAsAT  
 TTTCAAAGCGCGCGACAAAAAGCTTTGGATGCCAATACCAATGCAGTAACACCGCGCTC  
 GAAACAGGCGGACACCGTTACTTTGGTTCGTTTCAGTACTTTCTACTGGGCGAAGCTGCG  
 GGAAGCGCAAGGCGCAACCCCAAAACCGCGAGCGCTCTGACCAATGCGCGCGCAAAAC  
 GCCATAAATTCGCGCGCGCAAGCTTTGAAAGACGCACTGAAGCGTTTTTTATGAAAA  
 AAGCGGATTCTTTAAAGAAATCGGCTTTTTATCGGTCCACATTATCTGATTTCAAATCG  
 GCAACACACTGCTTTGTCAGTGTCTCAAAAGCAATTTGCGCGCGCGAGGTCAGCTGT  
 TCTTTGTCGCGCAGATTTCGCCAAGGATCTAATCTGTTTTCGCTCAATCTGTCCAAAGGC  
 TGCTCCCAATACATTTGCAGTAGTCGACGCGGAGGCGGGTATTGTTTGAATCTAAACCG  
 CGGCCCCGCAAAATCGTTTGGCAATTTTCGGCAACCGGAATATCTTCACGCAAGACTCG  
 ACAATTTCTGTTTTCGCTCGCGTTTGGACATCGCGCATTTGGGAGAGCAGGCGGGTTAA  
 CGGAGCAACGCCAAATGACCCACGCCCAATGCGGATGCTGCGGATTTTGGCTTTTGTCT  
 TTTTTCGCGCGCGCAACCTGCTCTTTCGTGAGCAATTTCGTTTTCGGCTCAGTCATGCG  
 GCTTTTCCATGCGGATCATGTAATCGTTTTTCCACGCAATCCAGTGCTTCGATGGCTGC  
 GATTGCCGACTTGATGTGTTTTTCGACCGTGCTGTGGGTGAGAATCAGGATTTCGGCAGT  
 GGTCTGATCAATCAGCGCTTTTGAATCAGTGCTTCGATGGACAGCTTTTCTGTGCCAA  
 CAGCGCGCGGATTTCGCCACGCTGCCGGTTCGTCTTTGGCTTGGACGCGCAGGTAGTA



GCTGCTGGTAATTTTCGTCATAGGCAGGATGGTTTTCGCGTTGGACTTTCGCGGGTTGGAA  
CGCCCATGTCGGTACGCGGTGGCGGTATCGGCTTCAACCAGGCGGGCGATGTCGATGAT  
ATCGGCAACCACGGCGGAAGCGGTTCGCAATGCGCCCGCGCCCGCGCTAATTAAGGT  
TTGCGCAACCATATCGGCGTTGACGCGCACGGCGTTTCATCACGCCGTTGACGTTTGGCAA  
5 GAGGCGGCTTTTCGGGAATCAGGGTAGGGTGGACGCGCAGCTCGATGCTTTCGCGGTTT  
GCGGGTAATGCCAACATTTGATCGGATAGCCAGGTTCTTCGCGCTATTGATGTCGCG  
GCTGTCGAGTTTTCGTCATGCTTTCGAGGTAGCAGGCGGAAAGTTTCATCGGCTGCGCAA  
TGCCATGTCGCTCATGATGGTGTATTTTATGGCCCGCATCGTGCTTCGATGTCGAAGT  
CGATCGGCTTCGCATAAACCAATGCCGCGCTTCTTCAGTACATCGGCAAGCGGCT  
10 GCCTTTTTCGCGCATTTTCGAGAGGATGAAGTTGCTGGTCCGTTAATAATGCGCGCGAT  
GGATTAACTCTGTTTTCGCGCAAAACCTTCGCGAGGGCTTTGATGATTGGCATACCGCC  
CGCTACTGCGGCTTCAAAATGGACGATGACGTTTTGTTTTTCGCGCAGCGGAAGATTTTC  
GTTGCGGTATTTCGCGGAGCAGTTTTTGTGCGGTAACGATGTTTGCCTTTTCAAT  
GGCTTTCACACCCGCATCTTTGGCAATGCCGTTACCGCGCAACAATTCGACGACGACATC  
15 GACGCTTCACGTCGACACGTTTCAACGCGATCTTTGACAAAGGCTCGGACGCGGACGCT  
TTGTGCGGCTTTTTTCTTCACTCAAAATCGCACACGCGCAAAATACGGATTTCGCGCCCAA  
GCGACGGGAAATTTCTCCGCGTTGTCGCGCAACACGCGCAGCGCTACCGCCCGCGACCGT  
ACCCAACTCTAAAGACCGATGTTTACTGGCTTCATTGCTCTCTTGTAAGCGACTGA  
AATGTAATATTGAAAGACGAAATATCCGCTCCGATATAATTGTGCCGCACTTTGAAT  
20 CAAATCGCGTCTGAAATCGGCGGCGGTCAGATGAATTCGCAATCCTCATGTAATTT  
CTGTAATTTGATCCCTTTTCGTTGATAGTATGCGGCAACGGGTAAATAATGTTGTT  
TGAAGAAATCCGATAGACGCACTTTGCGGAATATGAATGCGGTGCGGCGGAATTCG  
GCTGCGCGGGCAAGTTTCCATAAACCCGTCGTTGTATCAAGGATTTCGCTGCTGCTGCT  
GCAATGCGCAACCTTGTCCGATCTGACTTCGGAACCTGTTGTGCGGACGCAAACTCTG  
25 TGACTATCCGGAATATTGATTATCGGACGCGGCGCGCTCAGGAGTTTATCCATCCCAA  
AATCATGCGGATTTTCCGGAATCGGAATCAGCGTGAATGATGAATACCGATTTCGCG  
ATTTCAGACATTTGTTTTCGCACTCGGAAGGCGCAGGGCTTGGGCTTGCGCTTCAGCG  
GTAATTTCCCGTTTCAGACGCGCATCGGCACTGACTTTCAGTAATAATACGGGCTTTTC  
CGCCCGACGATGTTCCGTTATGATTGAAATCAAAACCTCACCCTGCAACGCGGTTTGA  
30 AAGTCTGCTCGCAAGGCAACGCTACCGTCAATCCCGTCAGCGGCTCGGTTGATCG  
GCAAAACGGGACGGGCAATTCGAGCTGTTTGCCTTAATCAAGGTTGAAATCACTCAGG  
ACGCGCGGATGTCGATTTCGGAACCACTGGCGGCTCGCTTCGCTTCCCAAGAAACGCG  
CCGATTTGGATATTTCGCTTTGGATTACGTTTTGCAGGCGGATGCGAGTTGACGAGCTT  
TTCAGACGCGATTGAGCGAGGCAAGCGCAAAATGACGCGATGAAGCAGGCGGCAATATC  
35 ATGCTAAATTGGAAAGAAATCGACGCTTATACCGCGCGCGCGCTGCGGCAAAATTTGTTGA  
ACGGCTGGGTTTTTCGCAAGAAAGACACAGCGCGCCCTCAAACTCTTTTCCGCGGGCT  
GGGCTATGCGCTGAATCTTGCGCAAGCCCTGATTGCGCGCGCGATTGCTCTTGCTTG  
ACGAACCGACCAACCACTTGGATTGGAAACCGCTTGTGGCTGGAAACCACTTGCCT  
CTTTACCTCTGACGCAAAATCATCATTTCCCATGACCGGATTTTTCACAGCGGAAACTA  
40 CCCAAACCATTTGAATATCGCAGCAAAACCTCAGCAATACGCGGCAATATGATTTTT  
ACCAAAACGCACTGCGCAGCGCTTCGCGCAACCAAGCTGCCATATGTCAAACAGCAGG  
CGCAATCAACATTTGCAATCCTTTATCGACCCTTCAAAGCCAAAGCCACCAAGCGCG  
TTCAGCGCAAGCGCGCATGAAGGCTTTGGCGAAGCTGCAACGATCGCTCCGCGGATC  
TGACAGCGAGTTTTCCTTTGAGTTTTACCATCCGACCATCTGCCAATCTCTTGTGTA  
45 AGCTAGAACCGCAGATTGGGTTACGAAGGCAAACTGTTTGCAGCAGATTACCCCTGT  
CGCTGGAAGCGGCGCGCTATGTTTATTTGGGTGTCAACGCGCAGCGTAATCTACCT  
TTATCAAGGTTTGGCAGGCAATCGATTACTTCCGCGACATCGTCGCTTCGGAAT  
AACTCAATATCGGCTATTTTGCCACACCACTCGATACCATCCGCTCCGACCAAAAC  
CTGTTTGGCATATTGACGAGCTTTCTCCGAGATGCGGCAACGAAATCGGAATTTCC  
50 TCGGAGGCTTCAATTTTTCGCGCATATGGCTTGCAGAAACCGCAACCATTTTTCGCGG  
GAGAAAAGCCGACTCGCTCTTGCCATGATTATTCGCAAAAGCGCAACCTGCTGCTGCG  
TTGACGAGCGCAACCACTTTGGATTGGATATCGCGCACGCTTGACGCTCGCTGCG  
AAAGTTTCCAAGCGCTTAACTCGTGTATCGACGATCGCAGCCTGCTTGAAGCGACGA  
CGCAGAGCTTCTCTGATCGATAAAGCGCTGTAAGAACTTCGACGCGGATTTGAACG  
55 ACTACCGCAATGGCGTTTGGCAGGAAACGCGCGCTGCGCGCCGACGATTCGCAAC  
AAAGCCAAAGCGCAAGACCAACGCGCATCGAAGCAAACTCCGTGAGAAAGGCC  
GACGCGGACGCGGATACACAGAAATACACCGTCCGCAAAAGAAATGGCGCAGCTTT

CCGAAATTCAGACGGCATGTGAAGCATTTTTCAGCACAAGAAGAGCTTACTTCGAGGAA  
 ACAAGAGAAAATTCGACGACACCTTATCCGAGCTGGCAAAAGTCAAAACACACACTTGC  
 AATCGAAGAGGTTTGGCTGGCTTGCCAAAGAAGATTGGAAACAGATTGAACATGAAATCG  
 AGAAACAGTTTGCAGAGCGATAAAGAAGCGCGGGGAGGGTGCTTATCTTGGCTGCCAAT  
 5 AACGGTATAATTGGGGCTTATCACCGCTTTTACCGGTATAAATCATCAGACTTTTGGC  
 GCCTTGGCTTCCGTGCTTTCGGCGCGGGCGGCAAGCTCCGTATACCATTTGCAAC  
 TCAATGGCAAAAGCGTATATACATCAGCCCGAGCAGGATTGTGCGCGATCGGGATT  
 CCTAAATCAGCAGCCATCAGGAGGCGGATACCGCTTGAATTAATAAACTCAGTTAA  
 GAAGCCAAATACACATAGAAAGTAAAAAGAAAAACAAAAACCTGCCGGGAAAAAGAAC  
 10 AAGCAGGCTGCCAAGGCCCGAAAGAAAATCAAAGCAACCAACCGAAAAAGAAAGCCCG  
 TAAACCGCAAGAAAGCATTACAAAAAATACAAAAAATCAATGATTATCCGAAAAATCA  
 AGCACATATGAAATCAAACTCCTCTTAATCCTAATCAACTTTCCCTGATTTCAAGCG  
 CATTTGGGTGCGAATGCGGCGAAAACTACACCTGCACAATCAACGGAGAAACCGTTTACA  
 CCACCAAGCGCTCCAAAAGCTGCCACTCAACCGATTGCCCCCAATCGGCAACTACAGCA  
 15 GCGAAGCGTATATCCCGCCCAACAGCGCCGAACCGGTATCATCACCGTCAACGCGCGGAC  
 AGGTTGTCAAATATAAGCCCGGTCAAACAGTATCAACGCGGCAAAATCAATACGCG  
 CGCCGCGCAACAAAGCACCTCAAACAACAGCAGCGCTCCATTCTCGAAGACAGATTTGA  
 CAGCAAGACGCAAAAGCATTTGGTTGAAGCCAAAAAATGTTATCAACGACGCTGCGCAA  
 AGGCGGCGCAACATCAACCATCAAGAAATAAATGCATTACAAAGCAATGTATTGGACAGCG  
 20 AGCAAAATATTCAGCCCTGCAAGGGGAATCGGGCGTATGTAAGCCGTGTTTTCAAAT  
 CGCCGTTCAAGGATTTCAGAGAAGAAATGTAAAGAACAGCGGCATATCCTGTGTGTG  
 CGGCTGCCTGTATATTATATTGAAGGTCAACGTATTTCCCAATACCGGCTGGATGGAAGT  
 GCGAAAGGGATCAGGGCATGTGCTTCAGTACCTTCGGATACGCGGATGCTCGGGGCT  
 25 TACACTTCAGCCGATTGGCCATACCTTTAAATTTCTACTTGGAAAGACACAGGGACAGC  
 TCAACTGTTTCGATAGTTTCGATAATGTATATTATGTAATTTGTGCAAA  
 TAACCTCAAGGCATTAAGCTGTGTTGTATGCTTTGCCAGTTTGGGAGAAAGTTGTCCAT  
 ATCGCCCATAAACGGCGTTGCGATGGCGTTCGAGCAATGGGTCACTTCGTGACGAC  
 GACGTATTAAAGCGGTGCGGACCCCGAACCGGATCCCTAAATGTCTTGGTGGGAATTT  
 AGGGGATTTGGGGAAATTTGCAAGGGTCTCAAACCCGCTCGCCTTATAGCCTGTCTGT  
 30 GTGCGCATTTCAGCGCTCAAACCCATATTTCAAGGTGGGCATTGACTTGGTTTGGCA  
 CTTTTCCACTTCTCGGGCAAGCTCGGCCATCGGGCTGCGGTAGCGGTCTTCCAGCGTGTT  
 CAAGCGCGTGATAAGCTGCTGAATACTGTTTCCAAGCGATTTCGATTCCGCTTTGTAA  
 ATCGCGAAGCCATTTGCTTGAACGGCAAGCTGCTTATTTCGGCTTCGGAAGTCGGCC  
 AAATGTTTGAATACGGCAAGGTCAGGGCTTCGATTGGGTTTGACTCGCTTTTCG  
 35 GCTTTTCTCGCTCATCAGTGTGGGTGGTTGTAACAGCGCCGTTCGCTCTTCTC  
 TATGCGCTTCTTCCATGCGGTTTTCAGAAAGTTTGGCGAAAGTTTGCCTTTTCGATC  
 CAATACGTGTTTCAGCGCACCTCTTCGCGCGCGTGTCTTCTATGTGGTTTCCAAATTC  
 TTGGCTTAGCGCTTCCAGCTCGCTTGTGTTTTCTTCCAGCTTGGCGATGCCGTCTGAAA  
 40 GTACGCGCGGCAACAGCTCGGGGCGATGACTTCGTGCGGTATTTTGGTGTATGCG  
 CTTGGTTTGGCTTTGGCTTTTGTGCGGTTTCGTTCTCAGAGCAGCAGCTCAGGTT  
 CGCGGCTCATCGCTTCTTTGGTGATTTCGGCCAGGTTTTTAACCGCTTCAGGCCATC  
 TTGGGCGATGAGATAACATCGTCTTCGAGGGTTTCGCCCAAGTAGTCCGTCAGGATTTG  
 45 TGAGAAATCGATTCTCAATCAGGCTGCGCGGTTTGAACGCGTCCAGCAGGCTTTCG  
 CATTTCCGGATAAGCTGCCCGGTGGATGGCGGCAAGGTCGTTTGAAGTGTGCCACGC  
 GGCACAACTTTGTAGGTGTCGCGCTTTGAAGGCGCGGTAATCGGGTGGCGCAATATAT  
 GGTCTTGATTGGCTGCTTTCGATTTATAGTGATTAAATTTGGGCGTACTAGATTA  
 50 GCCCTAAATCCACCAATCCGCGAGGATTTAAGCTGTGAGAGTGGAAAGATTGCA  
 AATCGATTCCGTTGTATAGTGTAAAGTGGCCATCGTGTTCGGCAACCAACTCGTTTTTC  
 ATACGGCCTAAAATTTGCCAATAGGCTTCCAATGCGTCCATATCGTGGCAGGATTCGGC  
 CCAATAGAGATAGTAGGCGCGAGATTTCAGGCTTTCGACTTCCCGGTGTCGATATA  
 55 CGGAGGAGATTAAAGTTGTAATCTTGCTGCGATTTCGCTTAAATGCACCATCAGCGCT  
 GTAACAGGTTTGTGAAGTGTGATGATTTTGTAATGTCTTGTCAACGACAGCGGTTT  
 TTGTTGCCGCTTTTAATGAAGCCGCGGATGCGCTCAATCATAAACAGCGCTGCGCGCGCTG  
 ATAACCTTGGTTTGTTCCTCTTCGGCAATTTGGGCGGTTTGGGCGTGTCTTGTGCGATG  
 ACGATGATGACGAGCAGGAATGCCCGTGGCGTAAACAGGTTGGCGAGCAGCCGATATG  
 CCTTAAATAGGTCAAGGTTAAGCAATTCCTGCGAATACGCGCTTCGCGATTGCGCGCA  
 AACGACACACCGTGGGAGAAATAATCGACCTTTGCCGCTTGGTTTCAGGCTTTGAGC

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AGATGCAGCAAAAAGCGCTAATCGCCGTTTTTTTCGGGCGGGATAAGCGGGATTGGCAAC  
GGCAAAATCGAAGGCTTTAAGCCCGTCGTTTTTCATCAGCGAAAGCGAATCGGACAAGTG  
TTCGCCGTGTGATTTCGGCGGTTTCGTTGTGTGCAAAATCATATTCATACGG

- 5 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 60>:

**gnm\_60**

CTGAGCGCGGAAATGGCTTTCAGACGnCATTTGCGCTCAATAATAATATCCGCGnTCAG  
AATACACGGTTTGGATGCGCCGTTGCTTTGTGCGGACTACCGGAATGCGATTAAATCCA  
10 ACACGCCGCCAACACACGAAATnCGCGGCTTCCACCATTGCGGATCGAGGTTACGGTC  
GGCGGTGCTGTGACGGGAAACGCGTGTGCCGAAACATTCTGCCAAATCCGCCATTAAAC  
AGGATTTCGGGATGCCGCCGTGCGAATGTACATTGACGGGCATCTGCCGCTCGGTGTGA  
GACGGCGTCGCAACGGTTTGGCGGTTAAACGGGAAAGCGTCCGCAATACGTGATCGTACG  
GTTTTGCGCCCGCTCAAGGTAGGTTTCGAGCCAAATTATGGCAACAGTTTCGCGCCCGCT  
15 GCTTTTAGGGTGGCGTTGTGCGAAATACGGTGGCGGAGCAGCCTGTGAGACGATTGCGG  
CAATATGTTGCTTTGTGCCGACTTTGCACCGTTTTTGTGCTAAGGAAGCTGC

- The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 61>:

**gnm\_61**

CCCGTATCGGATGATTTTTGGGGGAATGGTTGCGCTCATGTTTTTTGATAACGGGAAAC  
20 CGCTTTTTCTGTAGAAAGGTAAGCGTTTACTTTAAGTAATTGACTCTGCGGGTCAAGT  
CTAATTTAAAAAATAATCCGGTTTTTCTTACAAACTGCCCCATAACGCTTACTGTACC  
TTAATCTGATGGTTTTTCGATAATAATTATCATTACAAATGCAATGCCGGTTCGTTTGCTTG  
TGAAACATTCAAGATGCCGACTCTGACGGCATTACAGACGATCTGAAAAACAATAACGGCA  
CAAGGATGGGTACAATCGCCCTATGGAAAAAACACCCCTATCCGCCCGCGCACCATCC  
25 CTTGGCTGCCGCTTCTGCTGGCAATTGCCATTTTTATGCAGATGTTGGATGCGACCATTT  
TAAATACGCACTGCCTGAAATTGCCGCCGACCTGAATGAGTCGCTCTGGATATGCAAC  
TGGCAGTTATTTCTTACACGCTGACGGTTGCCCTGCTGATTCTTTGAGCGGTTATTTGG  
CGGACAGGTTTCGSAACGAAAAAGTCTTTTTCGGTTGATGCGGTTTTATGCTCGSAT  
CGGCATTGTCGCGCGCATCGGTTTCGCTGTTGAATTGACGCTTCCCGCTGTCGTTCAGG  
30 GCATCGGCGGTTGATGCTGGTTCGATACCGCGCTGTACCATCTTGCCTGTGTACGACA  
AGTCCAAGCTGCTCAATGCCATCAATTATGCGGTTATGCCCGCATTAATCGGGCCGGTTT  
TAGGGCCTTTGGCGGGCGGTTATTTGGTCGAATACGCTTCGTGGCATTGGATTTTCTCTGC  
TCAACCTGCCCATCGGTTCTGCTGGGTTTCATATTGGGACGCAACATCATGCCCGATATTA  
AAGGCAGTAATAATCTCTTTAGACTTCAAAGGTTATCTGATTTTTCTGCGCGCGCTGCC  
35 TCTTGTTACTTTTCGGCAGAAAGCGCTGTGCGACGCGCTGCCTCCGTATTTTGACATGTGCG  
CGCTGTGCGCGGAGTCTGTTTTCGACGCGCTTATTTTCGACATATGAAAAACGGGTCCA  
AATCCGATTATTCGCCGCGACCTGTTTCTGATACGCACTTCCGCTCGGGCATGCGCGGCA  
ATCTGTTGACCGCTCTCGGCATCAGCTCGATTCTTTTCTGATGCCCTGATGTTTTCGAA  
TCGCTTTTCGGCTTCGGCGCAAGCGCTGTCGGGTTGGCTGGTGCACCCGCTCGCCCTGTCTT  
40 CGCTGCTGGTCAAACCGCTGATTGCACCGCTCATGAACGTTTCGGTACCGCAACGGTAC  
TGCTTTTGAACACCAAGCTGCTTGCOCGCTTCATCATGCTGCTGCCCTGCCATGACGGAA  
ACTCGCCGCTGTGGATTGCGTTTTTCCTCTCGCTGGCGATGCGGCGGTGCAACTCCCTAC  
AGTTTTCTGCCATTGAACACACTGACCCCTCGCGGATTTGCGCCCGCAACAAACAGGACGCG  
GCAACAGCCTGATGGCGGTCAACCAACAGCTTGCATACGATGGGCATTGTTGCCGGG  
45 CATTAACTCTTAAAACTTGGACATTTCTGATACGCGCTCTTCAGGCTGTCGATTTCGCTT  
TCGCTATGACCTGCTCAGCATCGGCGGCATCACCCTTGCAATCATGCTGGTTTTTCAAAC  
GGCTGACAGCTTCAGACGGCACCAACTGACACGGAACACACCGCTCTGAAGCGGTCAC  
ACGCAAAACTTTTACCCGTTTCAACGTTTGGATTATGATACCGCATCTCAATGCGCGCCA  
ACCCAAAACACAGGCAATGCCGCTGGAACCATATCCCTGATGAACACGCAACGCTTAA  
50 TTTCCCTTTTATGCTCTCTCTCTGTTTCATGTTCTTCATGGTTGCCCCACTGGAAGAAC

GGACGGAAAGCCGTCATTTCAATACTTCCAAACCCGTCGCGCTGGACAAATCCTGCAAA  
 TCCGGCACACCCCTCATACCAACGGGCTATCCGATATCTATCTGTTGAACGACCCCCACG  
 AAGCCTTTGGCGCCCGCGCCGCTTATCGAATCTGCCGAACACAGCCTCGATTTGCAAT  
 ACTACATCTGGCGCAACGACATTTCCGGCAGGCTGCTGTTCAACCTCGTGACCTTGCCG  
 5 CAGAACCGGGTGTGCGCGTACGCTGCTGTTGGAGCACAACACCGCGGGATTGGACG  
 ACCTCTCTGCTTGGCCTGACAGCGCATCCCAATATCGAAGTGCGCCGTGTTCAACCCCTTCG  
 TCTTACGAAATGGCGCGCACTCGGCTACCTGACCGACTTCCCGCGCTCAACCGCGCAT  
 TGCACACAAATCCTTTACCGCCGCAACCGCGCCACCATACTCGGCGGACGCAATATCG  
 GCGCAAGTAATCTCAAAGTCGGTGGAGACACCGTTTTCGCCGATTGGACATCTTCGCCA  
 10 CCGGACGCGTCTCGGCGAAGTATCGCACGACTTCGACCGCTACTGGCGAAGCATTCGG  
 CCCACAACGCCACGCGCATCATCCGACGCGCGCATCGGCAAGGGTCTTCAAGCACTCG  
 CATACACAGCAGAAACGTCAGACACGGCTCCTCGCTACCGCGAAACCGTCGAAACGT  
 CGCCCCCTACCAAAAAATACAGACAGGATGCATCGACTGGCAGAGCGTCCGAACCCGCC  
 TCATCAGCGACGACCTGCAAAAGGACTCGACCGGACGCGCGCAACCGCGGATTGCCG  
 15 GCGCGTCCAGACGCGCTCAAAAGCCGCAAAAAAGCGTCTATCTGTTTACCCTATT  
 TCGTTCCCAAAAAATCGGGCACAGCGCACTGGCAAACTGGTGCAAGCAGCATAGAGC  
 TTACCGTTCTGACCAACTCGCTCGAGCGACCGACGTTGCCGCGCTCCATTCCGGCTATG  
 TCAATAACCGAAACCGCTGCTCAAGCGCGCATCAAACTCTACGAGCTGCAACCTCAAC  
 ATCGGCTCCCGGCCCAAAAGCAAAAGGCTGACCGCGAGCTCCGTAAACAGCGCTCGCAG  
 20 CCAAAACCTTCATTGTGGACGGCAACCGCATCTTCATCGGTTCTGTTCAACCTCGACCCC  
 GTTCGCGCGCTCTCAACACGGAATGGCGTTGTATCGAAAGCCCCAAATCGGCAAG  
 AGATGGAGCGCACCTTGCCGATACACACCCGCTACGCGTTACCGGTTTACCCTCGACA  
 GGCACAACCCGCTGCAATGGCAGATCCGCGCACCGGAAACCTACCGGAACGAACCG  
 AAGCGAAATTTGGAAACGATCGCGCCAAAAATCCTATCCTGCTGCCCATAGAGGTT  
 25 TATTATAGAAATATAGCGGATTAACAAAAACCATGACAGCTTGCCCTGACCTTAGCTCAA  
 AGAGAACATTTCTAAGGTGCTGAAGCACCAGTGAATCGGTTTCTGACTGTTTGTACT  
 GTCCTCGGCTTCTGCTGCTTGTCTGATTTTGTAACTCACTATACGCTCTGAACACCC  
 TTCAGACGGATATCGGAACCCGCAAGGAAAAACCATGTTTCCCGCGCAAAACCTTT  
 TCCCTGCTCTCAGCGCACTGCTCCTCGCCTCATGCGGCACGACCTCCGGCAACACCGCC  
 30 AACCGAAACCCAAACAGACAGTCCGGCAAACTCAAAGCGCTCCGATCAGCCACATCGACC  
 GCACACAAGGCTCGCAGGAATCATGCTCCACAGCCTCGGACTCATCGGCACGCGCTACA  
 AATGGGCGCGCAGCAGCACGCAACCGGCTTCGATTGACGCGCATGATTCAATTCTGTT  
 ACAAAAACGCCCTCAACGTCAAGCTGCGCGCACCGCCCGCGACATGGCGCGCGCAAGCG  
 35 GCAAAATCCCGACAGCGCCTCAAGGCGCGGACCTCGTATTCTCAACACGCGCGCGG  
 CACACCGCTACTCACACGTGCGACTTACATCGGCAACGGCGAATTCATCCATGCCCGCA  
 CGACGCGCAAAACCATCAAAACCGAAAACTCTCCACACCGTTTACGCGCAAAATACCT  
 TCGCGGCACATACCTTTTTTACAGAAATGAGCGCGCGCGCGCGCGCGGAATCGCGGC  
 AAAATCGCGCCTTATTCCGCTGTTTCGCTCAGCGATGAGAACACGTCGAAATAGTCGGG  
 AAGGTTTTTGGGGTGATTTTCGATCGTTGATGACGACGGGTACGCCCAACAGCGAAACC  
 40 AGCGAGAAACACATCGCCATCGCGTGGTGGTGGTACGCTGTCGATGACGCGGTGGGGTGT  
 AGCGTTTCCGGCGGGGTGATGTAATTGCTTCGGCTTCTCGACGACTTTTCCCGCGAGT  
 TTGCGCAACTCGTTTGCATTTGCGGCGATGCGGCTCGGTTTCTTTGACGCGCCAGCAACCG  
 ATGTTGGCGAGCGTGAGGTTTTCCTGTAGCAAGCGCGACGATGGCGAGGCTCATGGCG  
 GCACTCGGGGATATGTTTCGATCCAAATCAAGGATTGGACGGCAGCTTCCTTCGGGCTG  
 45 GAACTTCGACGAAGTTTTCGCGCCAAACACGCTCCGCGCGATTTTTCAGCTCGCGG  
 GCAGGAGGACATCGCCCTGTATGCTGTTTTCGCGCATACCGGTAACGCGACGCGGCGT  
 GCGGCAATCAACACCGGCTCGAGGAAGTAGGACGCGCTGGAGCATCGCTTCGACGTGC  
 AAGTGTTCGGGCGGTGGTAGTGGCATCGCGCGGAATTTGAAGACGCGGTAGCCTTCA  
 TTGATAACCTGTACGCGCAATTGCGCATCAGTTTAAAGTAATGTGCATATAGGCGTTG  
 50 GAAATCAATTTCGCCACCATACGGAATTCAAACGCTGCCCGTCAGCGCAACCGCAT  
 AAAAGGCGGGTCAGAACTGGCTGGACCATTGCTTTAATCGGAATCACGCGCTCGCGG  
 TTGCTTTGGGTTTCGCGATATGAGACGCGGATGTTCTTTCGCCGAGATATCGACA  
 TCGGCGCCGGCAATCCGCAACGATCGACCAAACTGCCGATAGGACGTTTCGTGCATACGA  
 GGCACCGCGTGCAGATGATAATCGCGCGCCAAAAACGGCCAGCGCGGTTTAAACGGGCG  
 55 AACGCGGTGCCGCGTTCGCCAAAAACAAATCGGCAGTGCGGTTGGGGAAGCGTCCGCTG  
 GTGCGGTGCACTTTCAGACGGTCTTCGGCAAGATATTCGATTGGAACCGAGGTTTATCG  
 AGTGCTTCGAGCATACGGTTCGGTATGTCGGGATTGAGCAGGAATGATTTCGCAAGCA

TTGTCCGACAAGGCGCGCAAGCAGCAGGGTTCGGTTGCTGATGCTTTTGGAGCGCGGCGAGG  
 GCGACGGTGGAAAGGTTTGGAGACGGGCGAGCGGGAGGCGGACGGATTTCGGTCATGGCAAAA  
 CGTCAATATTTATTAAGATATAAAACAGCGCTGCATATATACTGGTGCAAAATGCTGATGA  
 5 AATCTCCAGGCTTGGCATTTCCTGGTTTAAAGTCCGTAATATGGTGTTTTATGCCGAAAA  
 TGTGATTTTAAAAATTTTGTCTTCTAAAAATTTCTTTGCGGCATATTTTCAGCTTTGT  
 TTGCGGCATATGGCGGCTTTGCGGCGCGGCGCGGACGATTGCCAATTTTCATGAAATTTGGT  
 AGAATAGCCGCTGTTCAACGACAGACAAGCCGCGATTTCGCGGCGGCTTGATTTTATTTA  
 TTTTAAATATCCGACGCACAAAACAGACGGTACGCGGTATGCTTGCTGCCCAACACCGG  
 TGTGCGGAAATGGGAAAAAAGACCGGATGCAAAAAATCCCCTGACCGTACGCGGTGC  
 10 GGAATTGTCTGAAACAGGAATTCGACGAGCTCAAAGCGTGGCGGTCCCGAAGTGATCGA  
 AGCGATTGCCGAAGCCCGTTTCGACGGGCGATTTCGCCGAAACGCCGAATACGAAGCCGC  
 CAAGAAGCCCAAGGCTTATCGAGGGCCGATTTCGAGCTGGAACACAAAATTTCCGT  
 TGCCACATCATCAATTCGACCCGAAATCCACGCCGAAGGCAAAATCGTGTTCGTACGAC  
 GGTTCACGCTGGAAGATTTGGAAACGGAAGAACACGTTATCTATCAAAATGTGCGCGAAGA  
 15 CGAAGCCGACATCAACAGGGGCAAAATCTATGTGGCTCACCATCGCCGCGCCTTAAT  
 CGCGAAGGAAGAGGGGATACGGCGGAAGTCCAAGCCCGGGCGGCTGCGCGAATACGA  
 CATTTATCGAAGTCCGATATTTGATTGCGCTTGATTTCGATACACCCGACACACGCGAGG  
 AATATTATGTGGATTATAAAAAATCAGGACAAGGCGACGAAAGCCGAAGACACAGATA  
 GTACGAACCGGATTCATTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAG  
 20 CGGAGACAACCCCGTACTGGTTTTTGTTCATCCGCTATAACGCAACCCGTGTCGCGTCA  
 TTCCCGCAAAAAGCGGAATCTAGGACGCGAGGTTAAGAAAACTCGCATCCGCTGATTCCC  
 TCAAAAACGAAAAACCAAAATCAGAAACCTAAAAATTCGTTCATCCCGCGCAGCGGGAAT  
 CCAGTCGCTCAATTCGGTCATTTCCGATAAATTCCTGCTGCTTTTCATTTCGTAGATTTC  
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C T C C G A T C C C G A A C T C G A A C A C A G C C T C A T C A C C G C A T C G A C T T C A A C C T G T T T T G C C G  
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C A G C A A A C A C G C C A G G C C A T A G A A G T C G A T G A A G A G G A C A A G T C A G C G G T C A A A C C A C  
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G T T G C A G G A C G G C A T T A T G C G A A A A G C T T G C C G C A A C C G T C C G C T G A C G A A A C G C A A C  
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A A G C C A T A G C C A A A G C C A C G C C T T C C C G A C G C A A A A G C A A G C A C C G C C T T T A A C A A  
T G T T G A C C T A T C T G G A T T T G C A G G G C A T C A G C A T T G C C G C C A A A G G G C T T G A C G A C T  
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45 G G C T G G A T A A G G A A T A G G C A T A T C C G A A C A A T G C C G T C T G A A A T T A G A C G C G A T T T  
T A T T G A A A G G C T T T C T T C A A C C G C T T T A C A C A A A G G C G G T T T T T A T G C C G T C T G A A A  
G C C C T T C A G A C G G C A T T G G T T T A C A C G G C A G A G T C C C C G C C T T A A G C A G G A G A G G A  
T G T C A A G G A T G C C T G A T T T T A A A T C A C C C C T T G A A A G A A C G G G C G C A C G G C A T T A A T A T  
A C A G A T T C G A C A A G C A A G G T T A A A A C C A T T A A G G A A A T A C G A T G A A A T A C A A A A T G A G  
G G T T T A A T G G C T G G T A A G G T G C G A A A C A A A T A A A C A A G A G G T T G G T T G T C A G T A A T  
50 T G C C C T A A A C C C C T T G T T G T A T C T G T A T C A C T T A T T T A T T A C A T A T T C A G G C A A G C G T  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 63>:

### gnm\_63

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 TGGCGTTTGCCGACGGGATGCCGTGCCCATCGTCAATTGTCCGACAGGCTGGATACGG  
 GTCTGCGTTGCTGCTTCCGTAGTGGCATCGACATCGCGAACGAGCCGCTGCCCGCAGC  
 TTAATCAGGAAATAAGGACTGCAATAAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 64>:

#### gnm\_64

40 TGTGTTTGTTCACCGGTTGCTGCGGATAATCGTGGGTAATGCGTTTCGGCGGCATAAGC  
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 GGGAGGGGAGGGGAGGGGAGGAGAGGTTTTTGGGGGCTGGATTCTTTTCGACTCCGT  
 45 ATTCCGTTTTAAGTGATTAAGAACAATTTCAATGATGTTGAGGAGCGGACTATAT  
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 50 GTTTTCTGTTTTGAGGGAATGACGGGATGTAGGTTCTTAGAATGACGTGTCAGGTT  
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 GAGCGGATTAAACAGCCTTCATTGGCGCTGCTATCGAAAAAATGACGGTTTCGGTA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 65>:

25 **gnm\_65**

GTGCTGTAAATTATAGTTTGGTGTGTTAAACGAGTTAAACATATTTGCTGGATTATAC  
 TGAATTCACAGGCTCTTCCAATCGCTATCATTGAAATAATGAAAAATTTGCCAACGGT  
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 30 TAACCTTGCCTTTCCGCACCCATAGCTCAGTTGGAAGAGTGCAGTTTCCGGAAGCTGGA  
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 35 GTAGCCGAACATGCCGCGCTGTTTGATGAAATAAGTGAATCGCGATTGGGGATTGCGG  
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 45 ATCGTCTCTTTGAGCTAAGGCGAGGCAACGCC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 66>:

#### gnm\_66

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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 67>:

#### gnm\_67

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 CGGTGCGACCACTGCTTGCAGGCGAGCTTGTTCAGAAAGATTGATCTTCGTTGTAACAGT  
 55 ACCAAACCGCGCAGGTATAGCGCTAGTCCATATTCGGGTGTTGAGGTTGAAGCGGCGCG  
 AAGCGGTCATGGCGGCGAGCGCTTATCCCTTCATCATCTTTATAGTAGGCGTATGCC  
 GTATCCAGTTGGGATTGCTGGGCATGGCGCTGTTAGGGAAGCGCGATTTCAGGATTTCG

TATAATTTGACAGCTCGCGTATAATTGCTGCTGTTTCAGCTCGTCTGGGCTTCGGCATAG  
 AGTTTTTCCCACTCCAGTCTTGGGTAATCTGGGCATCTTTATCTACCGTACCTTTGAGTGC  
 GCACAGGCCTCAGTGCCAAACCTAATGAAACCGTTAAAGAATTTTTTCATGCAGAAT  
 ACTTCCCTTGTATGAATGAATCCGATTATAGCGACGATTCAGACTTTGCGTCAGCTTCCGAA  
 5 ACTGAAACCGTATCGGTCTGACCGTTTCGCTCGAGCTTGACGGCGGCGGTTGGATTGCG  
 GTATTGGCGAAATCTTCTGCCGACTACTCGCGAGCGCGCTGACATCATGGATTAAAGAA  
 GCGCGCTTTATTGTAAACGATAAACCTTCGCAACCCAAAGACAAAATGATAGCGCGCGAG  
 CAAATTTGTGTAAACGTCGTCGAGTGAGGAAATCTGGCGTTTGTTCAGAGCCTATG  
 GCTTTGATATTGTTTACGAAGACGATACCGTCATCGTCGCAACAAACCGGCGGAGCTG  
 10 GTGTGGCATCCGCGGCGGCAACTGGACGGGGAGCGTCTCAACGGCGCTGTTGGCGCAC  
 TGTCCCGAATTGAGCCAAGTACCGGCGCGGGCATCGTACACCGTTTGGCAAGGAAAC  
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 CAAGAGCGCACGGTCAACGCATCTACCGCGCGCTGCGCAACGGCATCGTCCCCTTCGAC  
 GGTAAAATCGAAACCCAAATCGGACGCGATCGGCACAAACCGCTGAAAATGGCAGTCGTC  
 15 AAAATCGGCGGCAACAGCCGTTACCCAGCTCAAGTGTGGAACGCTATCTTACCAC  
 AGCTATCGAATGCTCGCTCGAAACGGGACGAGGACGACCAAAATCCGCGTCCATATGCGC  
 GAGGCCAACCATCGCTTGCGCCGACCCGGTTTACGGCAACCGCGCCATCCGTCGCGC  
 GACACGCTGAAAGAAGCGTTAAAGTTTGGGTGCGCGTCAGGCGTTGACAGCCTACCGC  
 TTGAGTTTACCCATCCGAAAGCGGCGAAACCGTTTCGTTTGAAGCACCGGATCCAAAC  
 20 GACATATATCATTTGTTATCCGTCCTCCGCTCTTGAAGCGGTTTGGATTCTGCTTTGAGC  
 AATGATAGAAGAAATGGCAGGACAAATTCGGCGCGGACGACGACGATGATTGGAACGGAAGC  
 GACTATGATGTCGAAGTGGTTTATGTAAAGGAGTGAGGCGGCTTGAAGGCGGGGCGAAC  
 GCAGCGACCGAAATCGGAGCAGCGCGGCAATCGTCCCGCGGATTTCAACACAAAGCGCT  
 CTGAAGGGACCGGGCAGAAACCGCGGTTTGTGTTGCCCGGTTTCAGACGGCATTATGATA  
 25 AAAGGCGTTTAGGGTTTTTATGTTTACCGGCTTTGGCGGCCAAATAGTTGCCAGCAGC  
 GAGCCGGAGATATTGTGCCACACGCTGAACAAATGCGCCGCGAACGCGAACGCGCGCGC  
 GCGGCAAGTGTGCGGCGGCAAGCGCGCGCAGCGCGAGTTTTCATACGCACTTCG  
 ATGCTCAGCGCTTTTGTGCATCATAGGCAGCGCGGTCATTTGCGGCGAAAGAGCGC  
 AGCAGGTAGCCGATGCGCTTGTGGAGTACGACAAACCGCAAAATCAGCAGGCGGCTTCC  
 30 ATAATCTTGCCCTTGTCTGCCCAACACCGCGCCGATAATCAGACGATGGCGGCAACG  
 GAAACCAAGCGGCGAGCGATCGGTGAGCTTTTCGCTTTTACTGCCCAAAACCTTATGGACA  
 ATCAAAACCAAAACAAATGGGGAGCAAAACCATTTTGACGATGGACATCAACATCAACGCC  
 GCTTGGATTTCGACATTTTCGCGGCAAGCATCAGGAAGTGGCGGGAGTCAGCAATGGG  
 GAAATCAGGTTGGAACAGACGCTAACCGCAACCGCAAAAGCCATTTGCCACGCGCACTTC  
 35 TAGTTCATCATTGGAAGCGGTACCGCCCGGCGCAGCAGCGACCAAAATCAGCGCGAC  
 CGGATTTGGCAGGCGAGGTTCAACAGTTTGGACAGCAGCAGCGGCTTGGCGGCAATATG  
 GCGAATTTGTGCGATTACGCCGATGATGACGACTTTGGGATGTTTGAACAAAATATCGAAG  
 TCGGAAGGTTTGAAGGTCAAACCCATACCGCAACATAATATGCCCAACAGCCAAAGGAATA  
 TAAGGCCCGGCCATTGTAAGGTGTCGGGCGCGAAAAAGCGCGGCGGCAAGAGCGCG  
 40 GCCCAGAGGAAAAATGTTTTCTCGATAAGCTGCTGATTTTACTGAGGATATTATATAAA  
 TAATCGGTTGCGGTTTTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 68>:

#### GNMBA22F gnm\_68

45 ATGACGnCATAGGGnTTTCCGTTTTCCGATAAAATACCACAACCCAAAATCCCGTCATT  
 CCCGCGAAAGGATATATCCGCGCTCGTTTCGTTTTCAGTTTTCAGGCAACCTCT  
 GAnTCGTCATTCCACGCGAGGTGGGAATCTAGGTCTnTCCGACCGGAATTTATGCGCnG  
 TCTATCCGCGAAAGGGGATGCCAGATTCTTCGGTACAGAACTTATCGGATAAAACGGT  
 50 TTCTTTAGATTCTACGCTCTAGATTCCCGCTCACGCGGAATGACGATGGAAGATTGTT  
 GTTGGTTCGGATAAATTTCTCGACTTTTAAATAACnGATTCCCGCTGTCGGGAATGA  
 CGGCTAGGTTTTTTTTCGATAAAATACCACAACCCAAAATCCCGTCATTCCCG  
 CGACGCGGGAGATCGAGTCCTTTAAACTCCAGCCATTCCCGATAAATTCCTGTTACTTT  
 TCGTTTCTAGATTCCCGATTTCGnGGGAATGGATGGAtn



The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 69>:

**gnm\_69**

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CATGTTTGGATATCCATGCTGCTCCCTATGTACATAATAAAAAAATGGCCCCGTGGCCA
5 TTTTCGTCAGAAAGTTGAAAATACGGCGTGATTAAACCGCTTTTCGGAGAGAAATGAAAGT
TGTTGATTTATTTTGTGTTTTTGGGACGGAAAAAGCGGGTGTAAGGAGGTTTGTAAATGG
GAAATCGTGAATATGTTTGACAAAACAAATGTATCTATTGTGCGGTGCATGATTTTAT
GTTTGTAAATCAATATATTGATATTATTTCCGTGTTCCGGCGGCATGGAATCCGGCGGGA
10 GGCAGAGTATTTCCATCCTTGACAAAAGCGTGCCTGCAAGCCTAAAAATCGGGCGGGTTAT
TGTTGAGAAATCAAGGCTGCATCATGCTCTTTATCCGATTACAATTTTCCGCGGGCCC
TGCCGTATTGCCGGAAGCCGTGTTGGAAACGGCGCGCAGGAAATGTGGACTACAACGG
TACGGGTTTTCTGTGATGGCAATGAGCCACCGTTTCGGAATGTTTTGAGCATCTCGCA
TCATGCGGAACAGGATTTGAGCGAGCTTTTGAAGTGCTGACAACTATAAGATATTGTT
15 TCTGCAAGGCGGAGCAACCACTTAATATGGCAGCCATGAATCTGGCACACGGCTT
CCGCACTGCCGACGCGTGGTAACGGGCACTGGAGCCGTATCGCTTATGAACAGATGAG
CCGTTTGACCGATACGGAATCCGTTTGGCGCGCATGGCGCGAGCAGTTGCGACTATCT
CGAACCCTGCGCTGTGGAAACGTGGGATGTTGCACCCGATTCGGCGTTTGTCCATTTTGC
CGTCAATGAACGGTCAACGGGCTGCAATACCGTGAAGTGCCGTGCCCTTCAGAAGGCAT
20 CGCCGCCGTGGTGCGATATGTCAGCGAGATTTTGTGCGCGAGTTTGTATGTGCCGA
CTACGGAGTGATTACGACGGCGCACAGAAAACATCGGGCGCGAGGAGTTACGGTGGT
GATTGTCGCTGAGGATTTGCTCGAGCGTTTGTCCGAAACGATATCCCGATGTGTTCAACTA
CGTTTGCACATCAACCGCGACGGTATGTACAACACGCGCTCAACTACGCGATTATAT
GTGCGGGCGTGGTTCGCTGGCTACAGCGCAGGGCGGTGTGAAAAAATGAAGCGGT
25 CAATCGCTGAAGCGCAACCTTGTATGAGACGATAGACGGCAGCGATGTTTTATAT
CAACCGTATCCGTCGAATGCGCGTTTCAAATGAATGTCTGTTCCAAACGGGGATGA
GGAGCTTGACCGCGCTTTTGTGCTGGAAGCCGAATTGCAAGGCTTGTGCTGCTTAAAGG
CTATAAAACCGTCGGCGGTATGCTGCGCAGCATTTAATGCGATGCCGTTGAAGGCGT
GCGGGCTTTGGCAGATTTATGCGCGATTTCAACGCGGCTACGGTGTATGCCGATGT
30 TGTCTGAAGCGGCTTCAGACGGCATCGGCTGTTTCGGCGTTCTCCGGCGGCTTTGGAG
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GTGCCGGACTGTCGTCGCGGCGCGGCTGGGTTTTTCAAATATGAAATGCTTTGCCCG
TTTTCTGGCAGGGCGGTTGCAGACCGGTTGCAATCTGCTTACGATGTTTTATGCTT
GCCGACGTTTGAATGGCGGCGGAACCCCGCACAGCGCGCTTTCTTGCCCTGCTT
35 TGCTCCGTTGCCTTATAATTAAGAACTTTTCAAATCCCGGATTCCAAATGCCGGATG
CCTTTTCCAAACCTTATCGACACATTCAAATGATAAAACCGAACTGAGGCGGAAGCT
CGGCTCTTCCGCGCTGATGCTCTCTTTCCCTGTATTACCTCGCTGGTATTGAATTACGC
CTTTTTCGCAAGTTGTGAGCTTCATCCTTTAACGGCACGGGGCGGATATCTTCCT
CTATACGATGCGGTTGGTGTGCTGTTTTTAAAGTAATTCGTTTTACGCTCATTTGCCCT
40 GCGTTTCGTGCATAAAGTATTGATTCGTTGATATTGTTATCACTGCGCGGCTGTCTTA
CCAAGAAATATTTTCAAATCTATTCAACAGTCGATGTTGAATAATGTCTTGCAAC
TACGGCTGCCGAAAGCGCGCGCTGATTACGCGGGCTATGCTGTGGATTGTATGTTT
GGGCGTATTGCCCGCGCTGGCTATATCGCGTCAAGGTTAAATACCGCTTTGTGATTA
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45 AATGTGCAATATCAGGATTACGCTCGTTTTTCCGCAACAATAAATCAGTAACCATCT
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50 CCGCAGGTGAGAAGCTGCGGCACATCGACCGCGCACTCCCTGCCGTGATGTTCTCAAC
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CGTGCAGCGCGCGGCGTGAAGTTACTTGGTTGGAACGATTTCGGCTGCAAGGCGGT
GTGCGGCAAGTGGCAATACCGACGTTTACCTGCTCAACTGCCGGAATCTGCGCGCA
CGCGAGTGCTCGACAATATCCTGCTGACTAAGTTGCAGGAAGTCTTCAACAAAACAA
TAAAGACGCGGTTTTAATCCTGCATACCATCGGACGCCAGGGCCGAGTATTACGAAGC

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CTATACCGAAGCCGGAACGCAAAATTCACGCCGACCTGCGACACCAACGAAATCAACAAATG  
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5 TTTCCGACCAACGCGCAAAAGTTTGGGCGAAAACGGGATGTACTGCAACGCGCGCTTACGC  
CATCGCGCCTTCCGGGCAGACGATATCCGATGGTTATGTGGTTTTCCAAAGCCCTTCGG  
CCAAACGCGGGGATAGATTCCAATGCC TCAACAAAAGCGCGGAAAACGAATATTTC  
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10 TCTGAAGCCTTCGGAACGGCATATGTGTCGAACACCGACCGATGACCGGAGTATAAGCA  
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CCCCGATGCGGGCGAGTTGGAACAAATATTTCAAGCGGCAACCCAAAGTTCCCGATCAGGG  
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15 TGTGCTTAAGCGAAACCGGAATGGAGCAGATGCTGACGGCGGGTTGTGCGGCGTATGC  
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20 GTTTGTGAGCCATTGGTAAACGGAATCTCAAGCACAAATCCGCTCTGAAGGCTTTCAGAC  
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25 AAGCCCAAGCTGCTGATGCTGTGCTTTCGTGATAGGCAGGTTTGTCTCTCGCTCTCTC  
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30 GCCCTGGTTTTCTTCAACACTTTGTGTTGACGGAATATTTATGTTGCTCCATTTTCT  
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35 AGAGAAGAGAAGAGAAGAGAAGAGAAGAGAAGAGAAGAGAAGAGAAGAGTT  
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TTTTCAATGATGTTGCAGGACCGGACTATATCAGGTTTTGTGGCGATGTTTCAACACAA  
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40 TCCGTACTATCTGTACTGTCTCGGCTTCGCGGCTTGTCTGATTTTGTATACTCACT  
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45 TTTATCGGAAATGACCGAACTGAACGGAAGTTCGCGCTTTCGCGGAATGACCGGAT  
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50 CAAGAATATCTGAAAGCTGAGATTCTAGATTCCCACTTTCGTGGGAATGACCGGTCAG  
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55 GTAGGTTGCTAGGAATGACGTGGTGACGTTTTCCGTCGGGATGGAATTCGTCAATCCGCG  
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5 CAGGTTTCCGTGCGGATGAATTCATCATTCCC GCGCAGGCGGGAATCTGGAATTTCAATG  
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TCCCGCCTTATATGATGCGCTCTATCAAAGGGGCGCAATTACTTTTCTTAACATTCGCCCT  
10 TGACAGCCAAAGTGAAGGGGCTTTTTATGTACGTAGCAAAAGTGAATATTTTCTTGTTCC  
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GGTGAACCGCATAAACTCGCTGAACAAGAAATTTTCAAAGCTTTATCAGCGGTTCGAT  
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15 TCTTAGCCGCGCAGACGGGAAACGGCTGAAAGCCCCCCTGACTAACAGGGGGGAGCG  
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20 ATATTAGGTTTGGCATCAGAGCAGATGCAAAATCGAAGGCAATAAATTTTACGATTG  
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AATACGGTTTAAATCGAATTTGAAGGTGTAGGTTGCAACATTGCAAAATCCAGGTTGGGAA  
TTGAGGCTTAAAGCAGTTTTTGAAGATTCAATTGAGGCGCAGGATAACCGGGTAGTTTG  
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25 GGTTTTTCTGATAACAGTAACATGAGGCCGAAATCTGAAATGTTTGAAGCGGCTTGGCGG  
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30 TTCGATTACCGTAAAAAAGTGGCTAATTTAACTTTT CAGCATAAATTGAGATATCGAGAA  
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GTCAGATATCTGAAGCAGATTGGGGTATCCCAAGGGGTAGAACCTGAAAAATATTCG  
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TTAGAGGTGAATTTGGAAGAACTCGGAATTTCAAAATTAAGCAATCAGATAAATTCGAT  
35 CCGGATAAAGGCTTTTCGATCCACATCACGATGTGGAAGGTGAGAGCAATATCAGCTT  
TATCTCGACAGAATGTATGATCTTCATGCAAAATCAAATTAACCTAAAAAGGAAAAATTA  
ATATTTTAAATCAAATCAAATGTAACCTATCCGCAACTTTTTAGGAGCTAAAAAT  
TCAAAGGCGAAATTTGATGGCTCTAATATCGACACTTGTTCGATATTGGTTGCAACACCTT  
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40 GTAAGAATTTCTCAAATTAGAGAACTCAAAATACCCGTGCGAAATTTATGTTAACGGTTG  
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CAGGTCAAATTTGAAAGCTACGAAGATGCGTTGAAATTCAGGCATAAATGAATAGGGCGAG  
45 GATTCCAGATATTT CAGTTCTTCGTAATAATCGGAATAAAGAAAAACAGGCTCGGGCGG  
GGTCTGTCAACCTTTACAAAGCCCGCAACAAAGGAAAAATATCATGAAATGAACCTTG  
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50 AAAAGCAGCTTGGCAGCGGATCTCTTACACCGGCCATTGTTATGGCAGATACCTTTGA  
TCCATCCGCGATTGGTACGCAAGTAGCGAATGTAAATCATGGGTTTCGTGCAATGGTTTC  
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GAGCATGATTAAATCTGTCAAATAACAGAGTGAAGAAAAAGGGCGTATAAATGGGCTA  
55 TCGTGTCCGCATAAATGTTTTGATACAGAGATGCATGCAGACGACTATTTATGTCTGTC  
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ATGGGTCTTGAACGGAAAAAGCCGTAATGTTGTCCTATCCGAAATGTTCCAATTTTGAGCA  
GATCAAAACAGGGTCTTATGTGCGTTCGACGGTTTAAATCTGTCTGTAGTCATTATAGCG  
CTTCAGGCTTTGATTAAATTTTTTAAAGACATGGGCAAGGTTGGGATTGATTGATGGTT  
60 ATTGATTTTTGGTTTCTTCTCGGTTTCTTCTGGCTTTGCTGTCTGCTGTTGATTATTA  
TGACGTGTTTTAAATCAGGCTTTCAAACAACTTTGAAAGGCAGAACAAATGAACAAAC  
CGTTTTATCACGCAgCGCAGTTGGCACTTTATAAATATCAGCGCTCAAGCAAGTATTATG  
GTAACCAATGGCATATACCTTTTCGCTAGTGAGCTTTGGATTATTCAAAAGTTAATAAT

TTATAATTTCATGAAGAAATCCAATGTTTTTAAATAGAAGGATTCTAATAATATTGGGA  
AAATTTATTTTTCTGATGAGTCTGTGCGTATATAAAAAAT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 70>:

5 **gnm\_70**

CAATGCGGATTTCGAGCAGGAGTTGGAGGCGCTGCCGGGCATAGGCCCGCGAAGCGAA  
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10 GTAAAGGAAGGGCATCGGCCCGCTGCGTCTTTTTGTTTGAAGGGAATGGCTAAA  
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15 GCGTGTGGTGACAGTCGAAAAACGTGATAAGGCTACCTGAAAAGTTTGGGAGATTTTCAG  
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20 TATACTTAATTAATAACAAATAGTACAATACTCAACTTTGAAGGCTCAACCATGGCATA  
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25 TGGCTCGCGATGAGGTTTTTGAAGGCGCTGTGCGAGCGGACGAAAGCGATTTCGCGCGAC  
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AACGCAACGGACGGGCTATACCGTTGTGCTAGATAATGCCAAGTCTGAACGTTACTCC  
CTGTCTCAAAAGAAAAATCATGCGCGGACAGTATGTTTATACCGATAGCTGAGCAGCT  
GCGCAAGTTTGACGCTGAGCGGTTTTATCCATTACCGCATCAACCATTCGAAGGAATTTG  
30 CAGACCGTCGAAACCATTAACGGCATTGAGATTTTTGGAATCAGGCAAAACGCGCT  
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35 TACTGCTCGCGGCTTCGTGCGCTTGTCTGTATTTTGTAACTCCACTATATTTAGATAA  
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40 TTTGGACGGGCCATTTTGGTTTTGTCAACCGTCCAAGACAACTCACGGGGTTGTAGAT  
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45 AAGTTTTATGCTTTGGTAACGGTGTTTTTCTTATGCGCGATGATGGCTTGCCTTTGC  
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 TTTCTGCCGCTGACCACCATCACACTGTCGATATGAAGGCGGGCAGATTGCGGCGGCA  
 GGCAGGCTGTCGAATTTCTTGCGCGTGTGATGGGCGGTGTCGGCGTATCCGCTGCTCAGC  
 40 ACCCTGTGGGAACGGCGGAAGCGTTGCACCAACACAGCTTTGCCGAACACGACGCC  
 TATTTCGCAACATTGCAAGAAACGGCGCTCATTTGTCAGCAGCAGGCTTTCCGACAT  
 CAACACCTAGGCATCATCAACAATACCATACCAGCAGGGTTTATTATTCGCTGCAAC  
 GAAATCTTTATGGCGGCGAGCTTGTATTATCATCATGATACCCGTCATATGGCTGGCA  
 AAACCGCGGTTCCCAACGCGCGCGGCTGGACATTGAGGATTGAAACTTGAAGT  
 45 CCGCTGAAAACTGGAATATGTTCCGACGCGATTTTGAATGCAGCAGTTCGCGAAT  
 CCGCTATAATCGCGGCCCATCTGTTTCGCACCTGCAACGCTTCCACAGTGCACCAATCG  
 GAAAGATTATCCGCGCAAAACAGCGGTTTTTCGTTTAAACACTTGAACAACTGTTT  
 50 TTCGTGGTATAAATCGCGTTTTACTATTTAGAGATTGGAGACTGATTATGGACAGAT  
 TTGCAAGGTGACCGGCAAAACCGCGATGTCGGGCAACACGATATCGACGCCAACCAAA  
 AACCAACAGCCGTTTTTTGCCCACTTGCAATCACGTGTTTTGGGTAGAAAGTGAAAA  
 CCGCTGGGTTGCGCTGCGGTTTTCCAAACGCTGAGCATCGTACCATCGACAAAGTGAAT  
 55 TGATGTGCTGATTGGCTGATTTCGCTGCTCGCGGCAAGCTTAATTTAAACACTATTTAAT  
 TAAGGATTACTGCAATGCGGCATAAAATCAAACTGGAATCCAGTGCAGGTACTGGTCACT  
 TCTACACCACTACCAAAACAAACGCATATGCCCGGCAAAATGGAATCAAAAATTTG  
 ACCCAGTTGCCCGCAACCGTAGTGTATAAAGAACTAAACTGAAATTAATTTAGTTT  
 AAAGCAAGGCTCCGACTGCTCGGAGGCTTTGTTATTTTATCGTGTTCCTTTCGCGCT  
 GAAACATCTGCCGATGCGAATCTGCTGCAAAACGCTGCGCAAGGATAGAAACCGGCA  
 AACGGTTCATACACAAAAATCGCGCTGAAACGCTTCAGACGGCATTCGCGCAGTTTTC  
 AACCGCTCAGTTGTTTGGTGATCAGTTCTTCAGCGGTGGGAAATTTGTCGCGCACGCA  
 ATACCAAGCGCGCAACAGATTTTGGCGGTGCGGCTCATTTGGTAAACAGTTCTCAGCATCA

-565-

TATTGGTTCCGTGATAAAGCGGATGGGCGTGCAGCATATGTTTGCTGCTGTAATTTTCCCA  
 ATAATGAAGATGCACCGATGTCTTGACCGCGCTGTTCGGCTTCGAGTATCAGTTTGGCCA  
 AATAATCTGCGCTGGGAAGCCCAAGTTGAACCGTGTGCTGTAAACGGGGTGCATACCGA  
 CGCGGGCATCGCCAATCAGCGCGCTGCGTTTGGCGTAGAACGTTTGGCAATCATGCCGA  
 5 CAAGGGGGTAATGGTGAATGCTGCTGACCAATTCCATATCGCCGAGCCTGCCCTTGAGCT  
 GTTCTTTTACGCTTGGCGCAATTCTTCGGGGAAAGGTTTGAACGCTGTTGATTGTTTAT  
 CGGTATCGACGGTAATGACGGTATTTGCTCAGGTGCTCTTCCAGCGGCAGCAGTGGCATGG  
 TGCCTCGCTAATGGAAACATTCTGAACGGGTATGTTGGTTGGAAAGGGTATGTTTTCATAC  
 10 GGCAGACGAACATGGTTGCGCTGTAATCGTGCATATCGGAGGAGATACCGAGTTGTCGAC  
 GGGTTTGGGAGAAGCGGCTGTCTGCGGCCAAAGCAGGCGTGCAGTCAGTATTTTGGCGT  
 TTTCCAAATGACTTGTGCTTCGTGTGATGACTTTTGAAGTCTTTGCAACCGTATCGG  
 TCGAATGCTGACATTGTGAGTTGTGATACGACTTCATAGCGCGCGCGGATATTGT  
 GGTGGAAATCAGATAGCCCAAACAGTCGGCAGGTTTCGCCGCGCTTCAGTCGGTTGGG  
 15 GAAAGTCGAGCTGGTAGTCGGAACGTCGGTTCAGCACTTTGGCATCGCGAAAGGGTAGA  
 TTTCTGTTTTCCGGAAATTTTGTCCACATACCCAAACGCTGCATGATTTTCGGGGAAAAAT  
 GGGTCAGGGCGAATTTGCGCTCCGTCATATGGAAGGATTTTGAGAACAGTCAGTGGGCTCG  
 GTTCGATCAGGGTAACTTTCAAACCGCTGCCGGCAAGTTTCGGCTGCAAAATCTTAACCCG  
 CGCGGCTCGCGCAGCAGAGGATGTCGCTGTGTAACATCAAAATATCCTTTGCATA  
 GACGGATGCCGATGATTTAGATGGTATTTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 71>:

# **gum\_71**

CCGGTTCGAGTAGTCAGTTAATAGTTTCTCCTCTATTCTCCTTTGTAGACTTGGCACAC  
 ATTCAACTGGATGTGTGCATTTTTTATCTGAAGCAACAGCCTCTGTCGGTGATGTTGT  
 25 TATGTTCTATTAGGTGTCAAACCGCATATCCGTCTGAAATATTCAATCCAAATCCAAA  
 ACCGGATTTCCTTTGACCTCCTCCATCACAACATAACTCCTACTCTCCGAAGCGGCAGCG  
 AGTTGCATATAGGATAATTGCTAGCATATCCCGATAGGCAGACATATCGGGCAACAGTACT  
 TTAATCAGATAGTCGTATTTCGCCGACACCAAGTGGCATTCATTAATTTGCGGAATTTTC  
 AGCACTTCTTTTGAATCTTCGAAAATATTGCCCGATTGGATTGCAGCTTCAGCTCG  
 30 ACAAAAACCAATAAAGGTTTGCCCAACAGATGGGGATTGAGATGGGCGTGATACACGGAA  
 ATATAATGTTCCCGCTCCAAACGGCGCACCTCTCTGTAAACGGGCGTGGTGGACAGGCTC  
 ACCCTTCGGCAAGCTCCGTATCGGGATGCGGGCATTTCTGTAAGGATCTTAAGGATG  
 CGGAAATCGATTTTATCTAGTTCTTCATTTAGATTGCTTGTATTTATATTGATTTTITA  
 ACBAATAGAGTATATAGTGGATTAACAAAAACCAATACGGCGTTGCCCTGCCGTGCGCGTA  
 35 CTATTGTTACTGCTCGCGGCTTCGTGCGCTGTGCTTGATTTTGTAAATCCACTATATAT  
 TTGAGAAACGATATATACAGAAAAGCAAACCGCCTTCCTACCTGAAAACCTGCTGCTTC  
 GGCTTGAAGACACAAGGTTCTTTAATATTTTAAAGCCTTGGCGTTGGATTATAATGCC  
 CAACCGGATTTCTTAATTTTGTCTAATAACACTTGCTTGGTAAGGAATGAATTTATGCGCC  
 CTTTGAACGTGCAGATCAGTTGGGCAACCTTAGGCACAATTTACGATTTTGAAGGAAA  
 40 TGCACGGAGGCAAACTGTTGGCGGTAGTGAAGGCCGACGCATACGGAACAGGTTGCGGTGA  
 GATGTGCTTTTCGCGCTGGCAGACTTGGCAGACGGCTTTGCGGTGGCGACATCGATGAAG  
 GAATCAGGCTCGGGGAGAGCGGCATTACCATCCGATTTGCTTTTGAAGGCGGTATTTG  
 AAGCATCGGAATACGAAGCGGTTCGAACATACTGCTTTGGCGGCAGTCGGAAACCAAT  
 GGCAGCTTCAGGCTTTGCTGATCCGCCATTGGAAAAAACCGTCAAACTCTGGTTGAAA  
 45 TCGATTTCGGGATGCACCGTACCGGTTTTTTCCTCATGATTACGCTTCGGCATATGCGG  
 CATTTGAAGCAGTCGGAATATGTGGACAGATTGTTCTCAAAATTCGCAATTTCTCGTGGGG  
 ACGAACCCGAAGCGGTATGACGGAAATACAGATGGAAGCAATCGATTTGGGTACGGGAAG  
 GCGTGAAGGCGAAGAAAGCCTTGCCAACCTCCGCGCATTTTGAATGTTCCCGAAGTCCAC  
 GCAGGACATGGGGCGCGCGGCTTGGCGTTATACGGCAATTTCCCGTTTCGGAGGAGGCG  
 50 ATGACAGGCTGAAGCCCGGTGATGAGGCTTCAACCGTATTTTCGGCGAAGCGGTTTTAC  
 AGCGCACTCCCTATCGGTTATGGCGCAACATTTTATACCAAGCAATCTACGGCGCTCG  
 GCGTATGCTGCTGCGTTATGCGGACGGTTATCGCGCGCGCGCCCAAGCAATTTCCCGCG  
 TCGCTGTGCAGCGCAAAATGACCGGGTCATCGGCAGGCTCTCTATGATATGATGACCA

TCGAGCTGGATGCTTCGCAAGAAGGTTTGGGACACGAGGTGGAACGTGGGGCGGATACGG  
 TCAACACTCAATACCGTTTGCCGAAGCGCGGGAACCATCCCTTACGAATTGATGTGCAATA  
 TCAAACGTGCAAAATTCACTTATATCGAGTAATCAAGTCCAAACGAAATGCCGCTGAA  
 5 GCCTTTCAGACGGCATTTCGCCATCAAACCGCAATCAGTTTTTCATCGATTGAACGGGA  
 GCGCGGAATCTGCGCGCTCGGTTGACGAATACTTCGCACGAACCTCTTTGACCGGCATC  
 ACAGGCGCGTAGCCCAACAGCGCCGAACCTCGAGCTGTGCCGACGGTTTACCGGTT  
 ACCGGAATTAATGCGCAGCGCAGTGGTTTTGCTGTGATCATGCCGATGGCGGCTTCGTCG  
 CATATGATGCGCGAAATGGTGTGCGCGGGCGTGTCCGCGGGAACGCGAATCATACGAG  
 10 CCGACCGGAACAAACGCGCGGTCATGGCTTCGAGTTTGTCCAGCGTCAGCACGCTGCTTCG  
 GCGCGCGCAATCATACCTTCGTCCTCGGAACCGGGGATAAACGCGCCACTCAAACCCCG  
 ACCGCGCTGGAAGCCATCATGCCGCTTTTTTCAGCGCATCGTTACGCAATGCCAAAGCT  
 GCTGTTGTGCCGTGCGTACCGCAGACGCTCAAGCCCATTTCTTCAAGATGCGTGCCACT  
 GAGTCGCCGACGGCGGGGTGCGCGCCAGCGACAAGTCGAGAATACCAACCGGATATTC  
 AGCATTTTTGAGGCTTCGCGCCGATGAGTTCGCCCAACGCGGGTAATTTGAAAGCGATT  
 15 TTCTTCACTACTTCGCAACTTCGGTCAATGTGTTGCACTGAATTTTTCCACGCGGGCT  
 TTTACGACACCTGGGCGGATACGCCGACATTTGATAACGGCATCGCTTCGCCGGAACCA  
 TGAAACGCGCCGCCATAAACGGGTGTCTTCCACCGGTTGCAGAACACGACAATTTA  
 GCGCAGCGAAACCTTCGGGCGTGATTTCGCCGTCGCTTTGACGGTTTCGCCCGCGCAGC  
 TTAGCGCATCCATATTGATACCGCGACGCGTACTCGGATATTGATGGAGTGCACACA  
 20 ATATCGGTAGTCTTCATCGCTTCGGGAATGGAGCGGATTAACACCTCATCCGAGGCGAC  
 ATCCCTTTTTGCACCAACCGGAAAAACCGCCGATAAAGACACACCGCATGGCTTTGGCA  
 GCTTTATCCAAAGTTGCGCCACGCTGACGTAAGAAATCAGCATGGGTGGCCGCCGCGATT  
 TGGCAATCCGCGTAACGGAATCGCTGATTACAATCGTGACGCGGATTTGGCAGAC  
 AGATATTTTGGCGTAGTGACCAAGTCTTTGCCGACTGTGGTAATTTTATGAAATATTT  
 25 TGGTTCAACACATTGATATCGCTGCTGATGCAGTCGTGCAAAATCAATCCGCGATGGTAATG  
 GTGGGACATCAAAATTCGTGCGCAACCATTTTGACGGTTTCTAAAATTTGCGCGGAT  
 TGGTACTCATCACATTCTTCCAACCTCAAATCGCGGTGCATCGCTTGAAGATTCTTCGT  
 TTTGCTACGGGATACGAGCGGAGTTTTTGTCTCTTCGCGCAACCAATCAAAACCT  
 CTTGACGCGATTGCTGCATTTGAAGTGTCCACCAAGATAATCATAGTAAAAAATCGT  
 30 CCATCAGCGATTGTGGTGATGTTGAGAAATATTGATTTGGTTTTCCGCCAAAATTTGGA  
 CATCGTACAGCATGCCGACGCGGCTTTTACCAGTACGCGTGATGACTGAATTTGTCACAG  
 GCTTACTCTTGCAGATATCCGTTAAAGTCGAAATATACCACCGTTGGATTTTGAAGA  
 AATATTGCTCAACAATATATACATACAAATCGCCTCTGAACTATTTCAGACAGCATCAA  
 GATTACGGGTTTCGATTAATAACCATCTTATCCACTGGGTTTTCTGACCACTTTGTC  
 35 ATCTGTATAAACAGCTTCGCTCTTTTAGAACCATCTTCATACCACTCCAAACCCACCC  
 GTTGCGTTGATGGTTGGCGGATAGACAGTTCCGAGAGTAATCGCGCGCTTTTATCCCAAGT  
 CAGAAATTTTGGCAGGCTCATCGTTGACCAATAACATTTCCGCTCTTGACTGCGCTCGCG  
 ATACATTGCTTCCATACGCGGTTGCCTTATTTGCTTAAACTGGATTTCGCTTTCCTT  
 CGCGCGGTTACGGTAATAGCGGTATCCGTAACCTCACTCAAGCCATTTTATTAAGGAT  
 40 ACGGGCAGATTTTACCGGTTCCGATACCGATTGACCCACTCCCGGTCCGCGTTACCTTT  
 GCTGAGGCCCGCGCCATTTTTTCTGACCATTAAATGCCCAAAATCAACATACCGTT  
 TTGCAAGGTTAGGCACAAAGATTGATTTGCGTTGAAGCAACGATATAGGTTTCAGATA  
 TTTCTTATCAGCAGGATAATAAAAATCCTCGCGGTGCGCAATACCGGCCACCACTATA  
 45 TTGCGTGATATAAGCGGCAGAGACATCGTCGCGCTCAGCTTTCCGTTCTGATTAATAA  
 AACAGATAAGTCTGCGCGCGCAAGCGCGGCAAAACCCCAACGAGCAGTTGAAATATAC  
 AATCCGAGATAATTTTTCAATTGCAATTAGCGATATAAAACAAAGGCTGTGTTTGTAGTAAT  
 CTGTTGATTTCAATTTATTTGAAGGGAAGAACAAATTTATTTCCGGTTAGGAATAAACT  
 ATTCTATTGAATATATTGAAGCCAAGTACGCGCTATCAACACTATATTAACACTGCGCAA  
 50 AAAACAATTAACTTATAACAATATGGTAAGGATTTCTTGCCAAAGCATCAAACCCGAGAC  
 ACGTATGCTGTAATAATGCGGCTGTAAGGCAAACTCGTCTTACAGCGGCATTTCCCTTCAA  
 CTCACCTTTCACCCAATAACTGCTCGCGGTCAAGAGGAAACAAACCGTCCGCCCGCG  
 TGGTTTTCCAAACCAAGTAAAGGCAACTCCGATACGCTGCTTCAATACATCCCTGTATT  
 GCCCGATTTCCACCAGCAATACACCTTTGGGATTAGAAACTTTTGGCGATTTCAGAGAA  
 55 TCTGCGCTGGTGGCATCAACCCGTCGCGCCGCTGCCCAATGCCAATTCGGTTCTGTGCA  
 AATACTCTTCAGGCAATAACTCAACGGATTCCGCATCCACATAAGGAGGATTGGAAACAA  
 TCAAATCATAGTGCTTCCAATCCTTCAAACAATCCGATATGAATAAGCGGATGCGGTT  
 CTTCCAAACCATATCTTCGCATTTAATCCTCGCACTTCCAAAGCATCCAGGCTACAT

CAACCGCATCAATTTGGGCATCAGGATAATGATGCGCCATCTGAATGGCAAGGCAACCGC  
 TTCGGTGCAGAGATCCAAAGCATTATGCACCACTCATCGTATTCTATCCAAAGGACGAA  
 GTCGGTCACCCAAACAATTTCATAAATAAAGAACGAGGTATGATTACGGCTCATCCACAT  
 AGAAATCAAATCTCCCTGCCATGCTGGTGTGTCAAATAAGCGGCTGGAATGTGTTGCA  
 5 CAGCAGCAGCTCAATAACCGCCAGCACCTTCCTCTTTTCAGCTTCCAAGAGTTTTCGAT  
 CAGATATGGGGCAAGCATATCCAAAGGCAAAATCAAAGTATGCAGAAATCAAGCTG  
 CTTTCATCATCGCATTTATCTGTTCCATGACCAAAAAAGAGCCCTGCCATTAATAACCGC  
 TGACTGCAAAACGTAATAATATCGCGGATAGTCGTCAATTCTTGTGCTGCCTGATTAACA  
 10 TAATATGAACCATTTCTGCTATAGATACTTTTAATATTAACAGAAACAACAGCAAACT  
 TTTTCATATCGCCAAATAACCAACCAATCTACCCATACAACCTACATAAATGCCCGCGGAA  
 AACCATCGCCGCAAGCAAGGACCAATGGCCGACGGTATGGGCAATCTGATTGGCTGGGA  
 AAAAACGGGGCTTGTGTCGGTAAGCAGTGGATAACCGCAAAAGACGACAAGGTGTCGGA  
 TGTCTGCAATGCCAACGGCGAGATGGCGTAAATCGGCTTTACGAGCCTTTCTCACACGG  
 CGCATTGACGATACCCGGTCATCCGAATGCGGATGCGAGGTTGTTCCGATCGGGTGG  
 15 CGAATTTGGGGAAATTTGCCGAAAAAAGGAGCTTCGTAAGCGGCTATGCAGTATCGCG  
 GGATACCTTTATCGGCAAAAGCATATGTCAATAAAAAACAGCGGGCATGAACGTAAGGTAACT  
 TTGGCAAGGTTGTAACACAGCTGCGCTCAAAGGCAAAATCAGGCGGAATTTCCATCATGAC  
 AAAATCTGATGACTTATTGCGCTACGCAAAATATGAGGGTCTTATTTCGATAGGAAGG  
 20 TCATCCTTAATATTATTGACGACATAAGTATCGTGCGTTGCCAAGGTTGGGAATGAGTCT  
 TTTAAATATCGGTGTGATTGTAAAGGGAATTTCCAGACGACCAATAACATTTACGACCAATT  
 CATCTTTGAAGGATGAATAAAGCCCTTTTGCAGTGTGCTTCTGGAGCGGATAGCGTTAAGG  
 CAAGTACACTTCCAGCCTTGAAAAAGGGCTTTAAATTCAGCATGCCATTTATACAGGCAG  
 GAGTAAACCCATGACAAAGTTATACGCAAAATCGCCAAAGATGGAGACGAGGACGAGA  
 25 CACGGTCAAGGTTTGGGGTTACGCTTCAAGCGAGGAAATCGATTTCGACGCGCAAGTCAT  
 CGCGCGCGGACGCTATGAAGGCGGCGATTCCCGATTATATGAAGTTTGGCGCGGGGCGGAG  
 GATGACGCGGCTCAAACGCTGCGGGAAACGGCAATTGAAATCAACGTGGAAGATACGCGCAG  
 AACCTTTTTCGTGGCGCATATCGTCGATCCCGTTGCCGTGACGAAGGTCAAAAACAGGCGT  
 30 TTACAAGGCGCTTTTCCATCGGCGGACGCGTTACCGCCACGATGAGTTGAACAAGTCGCA  
 AATCACGGGTTGAAGCTGACGGAATACAGCTTGGTTGACCGACCCCGCAATCCCGATGC  
 GGTGTCTACCTGCTTTAAGCGGACAAAGGTGCGGAAGCGGTAAACAACGATACAGAACA  
 TAACTGCTACATATTTTAGCCATTTCCCTTCCAAACAAAAAGCACCGACGGCGGCGATG  
 CCCTTTCCCTTTACAGGTTCCCTATTTTATTCGCGGGCAGCACCGGTTTGGCTGGGGC  
 TTTTGGTGGCGGCGCGCCGACCGAAGCCTGGTCTTCAGCTTCGCCAGCACCGCAGGGCC  
 35 GATGCCCTTTACCTTGGTCAATCGTCTACAGACTTGAACGCAACCGTTTTCGCGCAGGTA  
 TTTCCGCAATGGCCTTCGCTTCGCGGGGCTATGCCCGAGCGCTCCAACTCCGTGTG  
 CGAAGCGCATTTGATGTTTACGCGCGCAGGGGAGAGGCGCAGGAGAACGATACAGAA  
 GTCACGACAATTTTCTCATGGTTTTTCCCTTAAGGTTTGCAAAACAATAAACCGCATCT  
 40 TGCGACGATAAAACGAGTCATTTCTAAAATGAATATCCCAAAGTTTCAAGCCGTTCTCCG  
 CAACCCGACCGGACACCGTACGATGCGCTCCGCGCATACCGGACATTTTTCGCGGGA  
 AAGCAAACTTTTTCGCGGCAAGCAAAAACCCCGCAATTAATCGGGGTTTTCTGAATG  
 GGTGTTTGGCAGTGACCTACTTTGCGATGGAAGAACACACTATCATCGGCGCTGAGTCG  
 45 TTTACAGGTCCTGTTCGGGATGGGAAGGCGTGGGACCACTCGCTATGGCGCCCAACTT  
 AAACCTGTTACAAATCGGTAAGCCTTAATCAATATATTCGGTAACTGACTGAATCAGTCAG  
 TAAAGCTTTTATCTCTTGAAGTCTTCAAAATATAGAGTCGAAGCTCACGAGCAATTAGTA  
 50 TGGTTAGCTTCACGCGTTACCGCGCTTCCACACCCCACTATCACGCTCTGGTCTCGA  
 ACGACTCTTTAGTGGGTTAAACCGCAAGGGAAGTCTCATCTTCAGGCGAGTTTTCGCGCT  
 TAGATGCTTTACGCGCTTATCTCTTCGCACTTACGTCACCGGCTATGCAACTGGCGGTA  
 CAACCGGTACACGAGGTTCTGCTCACTCCGCTCCTCTGCTATGAAGACGACCGGCTCA  
 AACTTCCACGCGCACTCGAGATA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 72>:

#### gmn\_72

TAAATGGGACTATAAGCAGGAAGGCTTAACCAAGAGCGGTGACGAGTATGTTACCATTAAT

CGTAACCGCACTGACTTATGGATACGGCGCAACCGCAGCGGGCGGTAGCCGCTTCAGG  
 AAGTAGTACAGCCGAGCTGCCGGAACAGCCGCACAAACAGCAGCAGCTACTACCGT  
 TTCTACAGCGACTGCCATGCAAACCGCTGCTTAGGCTCCTTGTATAGCAACCGCTGT  
 ATCCATCATCAATAATAAGGSGTAGTGTCGGCAAAGCGTTGAAGATCTCGGCACCAGTGA  
 5 TACGGTCAAGCAGATTGTCACTTCGTGCGCTGACGGCGGGTGCAATAAATCAGATGGGGCG  
 AGATATTGCCCAATTGAACAGCAAGKTAAGAACCGAACTGTTACGAGTACGGGCAATCA  
 AACTATTGCCAACCTTGGAGGCGAGCTGGCTACCAATCTCAGTAATGACAGGTATCTCAGC  
 TGGTATCAATACCGCCGTCAACGGCGGAGCTGAAAGACAACTTAGGCAATGCCGCACT  
 AGGAGCATTGGTTAATAGCTTCCAAAGGAGAAGCGCCGAGCAAAATCAAAACAACCTTCAG  
 10 CGACGATTATGTTGCCAAACAGTTCCGCCACGCTTTGGCTGGGTGTGTTAGCGGATTGGT  
 ACAAGGAATAATGAAAGACGGGCAATTGGCGCAGCAGTTGGGGAATCGTAGCCGAGCTC  
 CATGCTGGCGGCGAAGAACCTTGCTACACTCAGCGATGCGGAAAGCATAAGGTTATCAG  
 TTACTCGAAGATTATTGCCGCGAGCTGGCGGCACTCAACGGCGGCGATGTGAATACTGC  
 GGGCAATCGGGCTGAGGTGGCGGTAGTGAATAATGCTTTGAATTTTGACGATACCCCTAC  
 15 CAATGCGAAAAAGCATCAACCGCAGAAGCCGACAAAACCGCACTGGAAAAAATATCCA  
 AGGTATTATGCTGCATGCACTGACGAGGTGCGATGACTAATCCGCAAGGATAAGGATGCTGC  
 CATTGGATAAGCAATATCCGTAATGGCATCACAGGCCGATTGTGATTACGAGCTATGG  
 GGTTTATGCTGACAGTTGGACAGCTCCGCTGATCGGTACAGCGGGTAATTAGCTATCAG  
 20 CACTCTGACTGGCTAATCCTTCTGGTTGTACTGTCACTCAGGCTGCCGAAGCGGG  
 CGCGGGAATCGCCACGGGTGCGGTAAACGTTAGGCAACGCTTGGGAAGCGCTGTGGGGG  
 GTTGCTGAAGCGAAGCGGCTTAAGCAAGCTGCTCTTAAGAAACAATCAAACTTTGGC  
 ARAATTAGCCAAAGCAGAACAGCAGATTTTATCCGTATTGCCCAACGCGATACGCACT  
 GGATGCTATGGAAGACGGGATTTAAACAATAGAGTAAGAAAGGAGCAGGCTTGCTGTAGT  
 25 AAGTAATATTCCGTAACCAATTAACGGAAGAACCAAACTGACAAAGCCATAAGCTT  
 AAAGGGAGCACCCGTTTACAGCGGCGTAAGCGAACAGGAGATTTTTGGCTTTATCGCGCA  
 GATGACTGGCCAGAATCCGAATTTAGAGTTTGTGCTGACGGAAGATTAGCAAAATGGCAT  
 TATCAGTACTGGGAATGGGCGAGGAACAAAATTTGCAATTAAGAAATTTTCAAAACAGA  
 30 GAATTTCACTCAAGCAGATGGACATTAGATTGCGAATCCTCATCATTTTAAAGG  
 TACTAAATGGAGCTTAAATCCAATAATTTACAAAGGATTTTACCGTGGATGAGAAACA  
 AAAAATTAAGATTCTTGATTTCAAATCGATTATCCTCAATTTTAACTCTTAAAGAAA  
 TCAAAIGGGTATTAATTAAGATGAAACTTAAAGAACTTTCTGCTCTTTATGGA  
 AGAAGTGTAAATGACGGTTCAATCCGTTATACATGATTATACCGACGGTATCGGAATCC  
 35 TCTAATCGAACTTCAAAAGAACAGTGCAGAAATGAAGACATATGGCTACTTTTGG  
 AGATGCCCAAGCAATATGGCTGAAGACCCCTGGTATTACTTGAATGGCTTTGGTGGGA  
 TATTGGGTGCCAATAGATTGGCCGATTGCGGAATATTGATATTTATGAGCAGCGTA  
 GGTATGGTTAGCCGCTTTAGCGGCGTAACCGTACGCAATATCAGCAAACTTTTAAATAA  
 ACAAGCCGCTCTGAAATCTGTTTTCACTTTTTCAGACGCGCTTGCACTTGGCATTTT  
 40 ATTCTGACGGTTACGCGCTAAAGCGGCGTAACCGTACCTACGAGCTCTGATAAAATGAT  
 TTATGGGAAGCAAGCTGTAGCTGCAATGAACCTCATGCGTAAGGTGTGTGCTTC  
 AGCCGCGACGCGTTCCATGATTACGCGTCAATGCCGCTGAAAGCTCACAATTTTTCGA  
 GACGCGCATTTGTTATGCAAGTAAATATTCAGATTCTCTGTATACTGTTCAGACGCGTG  
 45 TGCTGAAGACACCTCCTACGCTTGCTGCGAAGCTTTCCGGTAAACCGGCTGTGAGCATTA  
 CGCGCGCGTATGCCAATGAAGAACGCGCATCTGCTGAGCACCACCGGATATCAGTTGG  
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 AGCTCTACACCTTCGATAAACGCGAGCTATAAAACCGGTAAGTGGTACAACTAAAACAT  
 50 TACTGAAATCAAGAGCATAAAGACGCCAAAGCCGACCGGTGAGCCTCAGTGGCGTAC  
 AAGTATTGAAATCAAACTCGCGCGCAATATCGGTGCCACGCCACCTTTGTTGATGAC  
 CCGCGGCTCCGTTAAAATCGAAGCGGAGCTGGGCTGGTTCTCTATGCGGTGAAGATC  
 TCAACTACGCAAACTTGACACCGCTACCAAGCGCAAAATTTATCGGCAATTACCTACGACA  
 AGGTGACAGACACCACCAACACACATGAAACCGGCTGCCCTCAAGGAGTATGTGAG  
 55 AATCGGCCAATCTGCAATCAGGCTGGGACGCCAACTCGAAGGCCACCGAGTTTGAACCA  
 CGCTGGCGGCGGCGAGCCATCCGTGACAGGTGAGCGCATCAGGCACGAGCAGATGCCAAG  
 TTATCTTTGAAGCATCAAAAGTAGTGTGCGCACTGAACAGTAAGCAGTAGCAAACTCTG  
 CCGCTTGGCAAAACAGGCGGAGCGGCGAGCATATGCAAACTTGAACCTGCCAAGT  
 TCCAGGCTCCGTTGCGCCGTACTCTCTGCTCCGCGGCGTACATTGTGCAATCCGCCA  
 AAGGCAATCTGAAACCGCAATCGAAAGCTGGCCAAACAGCCGAGTATGCTATCTGTA  
 AACAGTCCAAGTAGCGAAAAACGTCACCTGGAACACAGGTGCACTGCTTACGATAAAT

5 GGGACTATAAGCAGGAAGGCTTAACCAGAGCCGGTGACGCATTATCGCGCTGGCTGTTA  
 CCGTGGTTACTGCGGGCCGGGAGTCGAGCCGCACTAGGCTTAACCGCGCCAGCCGAG  
 CAGCGGGCCGATGCGCCCTTTGGCTCACTCGCTTCTCAGGCTTCCGTATCGCTCATCAACA  
 ATAAAGGCGGATGTCGGCAAAACCTGAAGGAATGGGCAGAACCCGACGGTAAAAATC  
 10 TGGTGTGAGCGGCGGCAACGCGAGCGGTATCCAACAACCTCGGTGCCCTCTCCCTTGCCA  
 TTTGGAGCGAAACCCCTTGGGTAACAACCTCAACGTTAACTGGCCAATGCGGGCAGTG  
 CGCGCTGATCAACACCGCTGTTAACGGCGGCGAGCTGAAAGACAATCTGGAAGCAAAAT  
 TCCGCGGCATTTGGTGAATACCGCGCATGGGGAGCGCGAGTAAGATCAAAAGGACTGG  
 15 ATCAGCACTATGTCGCCCAAAAATCGCTCATGCCGTAGCGGGCTGTGCGGCTGCAGCGG  
 CGAATAAGGGCAAAATGTCAGGACGGCGCATCGGTGCGGCTGTGGGTGAGATTGTCGGGG  
 AGGCTTTGGTAAAAATACCGATTTTAGCGATATGACCCCGGAACAATAGATTCTGGAAG  
 TTAAGAAAAATTACCGCTATGCCAACTTGGCGCAGTGACAGTTGACGCGCTAACGGGAG  
 GAGATGTCAATACTGCTGCACAAACCGCACAAAACCGGTTAGAAAAATAATGCGGTTAAAG  
 20 CTGTTGTAACCTGCTGCAAAAGTGGTTATAAGGTAGCCAGAAAAGGATTAAAAACGGGA  
 AAAATCAACGTTAGAGATTTAAACACAGACGTTGAAAGACGAAGTTATAATTTAGCCGACA  
 ACCTGACCACCTTATTGCGAGAAACATTGGATTGGAACGATGCCAAAGCCGTTATTGATA  
 TTGTCGTCGGAACAGAGCTGAATCGCGCTAATAAAGGGGAAGCGGCACAAAAGTCAAGG  
 AAGTTTGAAGAAAAATCGTCTTATATCCCTAATAAAGGTGCTGTACCGAATATGAGTA  
 CATACATGAAAAATAATCCTTTTGGAAAAACAGTGGCTCAAATTTAGAAAAAGACACGCG  
 25 TTCGACGCGACGAAGGCGAGTCTGTCTTCTTGGTAAAAAGAAACCAAGGGTTATTAAGAA  
 GCCGGGTA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 73>:

#### gnm\_73

25 GATGATGACGAAATTTACAGACTGTACGCGGTCAAAACCGTATTGAGCCGCCAACCCACAG  
 GGGATACATCTTGAAAAACAACAGACAAATCAAACCTGATTGCGGCTTCCGTCGAGTTGC  
 CGCATCCTTTTCAGGCACATGCTGGAATGGCGGAGCTGAATATCCAGTCCAACCTTGACGA  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 74>:

**gnm\_74**

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5

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 75>:

# **gnm\_75**

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10 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 76>:

**gnm\_76**

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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 77>:

# **gnm\_77**

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35 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 78>:

# **gum\_78**

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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 79>:

#### gnm\_79

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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 80>:

#### gnm\_80

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 AACTGTCTCAGCAGCTTTTAAACCCAGCTCAGCTACCACTTTAAATGGCGAACGACCTA  
 CCTTGGGACCGACTACAGCCCCAGGATGTGATGAGCGCATGTCAGGTTGCCAACTCCG  
 CCGTGATATGAACCTTGGGCGGAATCAGCTGTTATCCCGGAGTACCTTTTATCCGT  
 35 TGAGCGATGGCCCTTCCATACAGAACCCCGGATCACTATGCTGCTTTCGCACTCGCT  
 CGACTTGTGGTCTCGCAGTTAAGCTACCTTTTGGCATTGCACTATCAGTCCGATTTCCG  
 ACCGGACTAGGTAACTTCGAACCTCTCCGTTACGCTTTGGGAGGAGACCGCCCCAGTC  
 AAACCTGCTTACCATGCACGCTCCCGACCCGATGACGGGTCTGGGTAGAACTCAAG  
 ACACCGGGTGGTATTTCAAGGACGGCTCCACGAGAGCTGGCGTCTGTCTTCAAGCT  
 40 CCCACTATCTTACACAAGTGACTTCAAAGTCAAATGCAAAGCTACATGAAGGTTTCAG  
 GGGTCTTCCGTTAGCAGCGGGTAGATTGCATCTTCAACCACTTCACTCTGCTGAC  
 TCTCAGGAGGAGCAGTGTGGCCATCGTTACGCCATTCTGTCGGGTGGGAATTTACCGCA  
 CAAAGGAATTTGCTACCTTAGGACCGTTATAGTTAAGGCGCCGCTTTACTGGGCTCTGA  
 TCCGATGCTCTCACATCTTCAATTAACTTCCAGCACCAGGCGTCACACCTTATAC  
 45 GTCCACTTTCGTGTAGCAGAGTGCTGTGTTTTTAATAAACAGTCGACAGCACTTATCT  
 CTGCGACCTCCGGGGCTTACGGAAGCAAGTCTTAACTTAGAGGCACTACCTTCTCCG  
 AAGTACGGTATCAATTTGCGAGTTCCTTCTCTGAGTCTCTCAAGCGCTTAGAATT  
 CTCATCTGCCCACTGTGTGCGTTTGGCGTACGGTTCGATTCAAACGAGCTTAGTGG  
 CTTTCTCGGAAGCGTGGTATCGTTGCTCTGTTCCGTAGACACTCGTCTGCTACTTCTC  
 50 GGTGTGAAGAGCCCGATTTCGCTAAGTCTTCCACCTACCGGCTTAAACAGGCTATT  
 CAACAGCTTGCACAACTTAACTTCTCCGTCACCACTGCAATTGAACTCAAGTACAGGAA  
 TATTAACCTGTTTCCATCGACTACGCAATTTCTGCTCGCTTAGGGCCGACTCACCT  
 ACGCGCATGAACGTTGCGCAGGAACTTGGGCTTTGGGCGAGCGGGCTTTACCCGCT  
 TATCGCTACTCATGTCAACATTCGCACTTCTGATACCTCCAGCACACTTTAAGTGCAC  
 55 CTTCATCAGCTACAGAACGCTCCCTACCATGCCGTTAAACCGGCTCCGAGCTCTCGG  
 TTTATAGATTGAGCCCGTTACATCTTCCGCGAGGACGACTCGACAGTGAGTTATAC  
 GCTTCTTTAAATGATGGTGTCTTCAAGCAACATCTGGCTGTCTGGGCTTCCCAC

TCGTTTACCACCTTAATCTATCATTGGGACCTTAGCTGGCGGTCTGGGTTGTTTCCCTCT  
 TGACAACGGACCTTAGCACCCGCTGTCTGTCTCCGAGGGAACCACTTGATGGTATTCCTA  
 GTTTGCCAATGGGTGGTAAGTTGCAATAACCCCTAGCCATAACAGTGCTTTACCCCCAT  
 CAGTGTCTTGCTCGAGGCCACTACCTAAATAGTTTTCGGGGAGAACCACTATCTCCGAGT  
 5 TGTGTTAGGCTTTCACCCCTATCCACAGCTCATCCCGCATTTTGCAACATGCGTGGGGT  
 CGGTCCCTCCAGTACCTGTTAGCGCACCTTCAACCTGGCCATGGATAGATCACTCGGTTTC  
 GGGTCTACACCAGCACTCATCGCCCTATTAAAGACTCGGTTCCCTACGCCCTCCCTAT  
 TCGGTTAAGCTCGCTACTGAATGAAGTCGTTGACCCATTATACAAAAGGTACGCACTCA  
 CACCCTAGGCGCTCCCACTGTTTGATGCATCAGGTTTCAGGTTCTGTTTCACTCCCC  
 10 TCCCGGGTTCTTTTCGCCCTTCCCTCACGGTACTGGTTCACATCGGTCGATGATGAT  
 ATTTAGCCTTGGAGGATGGTCCCCCATATTACAGACAGGATTCACGTGCCCGGCCCTAC  
 TTTTCGTACGCTTAGTACCGCTGTTGAGATTCGAATACGGGACTGTCAACCATATGTT  
 CAAGCTTCCAGCTTGTCTTCTATCTCGACAGTTATTACGTACAGGCTCCTCCGCGTTC  
 GCTCGCCACTACTTGCAGGAATCTCGGTTGATTTCTTTTCCCGGTACTTAGATGGTTTC  
 15 AGTTCTCCGGGTTCCGTTCTCTAAGTCTATGATTAACAACCTAGGATACTGCACAGATGC  
 AGTGGGTTTCCCAATCGGACATCGCGGATCAITGCTTTATTGCCAGCTCCCGCCGCT  
 TTTTCGACGGCTTACACGTCCTTCGTGCCCTATCATCGCCACAGGCATCCACCTGATGCAT  
 TTTTCACTTGACTCTATCATTCAAGAACCTCTTTGACTTTGGCTAACATTCGTTGACT  
 AGAACCTCAGACTTGAATTTCCCTACTTTGATAAAGCTTACTGCTTTGTGTGCTTTAATC  
 20 TCGCTTTTGTGTTTCAGGATTAAGTCGATCAATCATCACCCTAAATCTGTTGTTGTTT  
 TCTTTTCTCTTTCGAGAGATTTTATCCTTTGCAAAAGATAAAATCAAAACCAACAGCT  
 TTGCTCTTGTGTTGATTTCCGCTTCCCAATTTGTTAAAGATCGATCGGTTTCGATATTG  
 CTATCTACTGTGCAATCAATCGAGCTG

25 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 81>:

#### gnm\_81

CATGCTGAACGTTTGGCTGACATAAAGTTAAATGAGTCAGTCCGCTATAATGATGAAAC  
 GGGTTAAAAAAGTGTGGCAATCGCTGTTCTTCTTGTGGGATACGCTTAAATAGACCAG  
 30 CAAATAAATGGGACGGCAATCAATAAAACATACCAGCTTGACATAAATAGGCGATGCC  
 AATCAGTTCCGGTATGATGTTTAAAAAATAATTGGGCTGGCGGAATGTTTAAACAACCA  
 CGAACGATTAATTTGATGATTTGTAATAATAGATTTTAAACGTCCTCAATCTCCCCAA  
 CTGCTTAATAATCAATGACAATATCAGAACGAAGCCATCACCCTCAGCGTACCAATCAA  
 GGATATGCCATTAAAAAGCAGTGTGAGAAAGCCATACCCAAACAAACAGCCCAATAATA  
 AAGCGTATGAACCTGCCGACAGCAGCGTGAATTTGGTTTTCCGTTATTTGCGCCCTTT  
 35 GGCAATCAAGGCTTTTTTTCATGTTTAAATAGAGACGGCTAAAAATACAGCTGTGATGATAAA  
 AAACAGGCTTAAAAATGCTTAAATCATTTGTCATTGATGTTTTCCRTTGAATTTGAAATA  
 AATAATAATCGGATTAATGGTATTTTAAATTAATGATGTTTCAGACCATCATGCTCTATA  
 AACAATTCCTCATTAAGTCCGCGCCGCAACCTGCTATAATAAGTCTGCAATCGGCGCAAT  
 CAATGCTTTGCGTTATTGTCATCCCAAAATAATTTGATGCTGCCTTAATTTAATAACCAA  
 40 GATAAGTTTTTTTATTCAATAAAATACAAAGGGAAGCGTTACGCCATTCGCAACAGATG  
 CAATCCACCGATTATTTAAAAAAGCGCAAGCCTTGCCCGCTTGCGGCAAGCTGCAAT  
 GCCTTTAATGTCCGCGAGCGCAAGCGTCGCGGTGGCCGCAACCTGTGCGCTTTTCGA  
 GCCATTGCTGTCATCGCCGCTCAAACTCTTCCACTTCGTCGCAACTCGCCGCTTGCACCA  
 TGACGCACAACCTTCAAGGCTTCCGCGCCTTCCACCCAAAAACAGGGAATGCCGCGCG  
 45 GCATATCGGGCGCAAGCAGTGCCTCTACGCTTTCATGCCACGCAATCCAATAGCGGTTGT  
 CCGTACGGACGAATTTGTCGTTTTCGTTGACCGACTCGCCTTCCGTACCTTCCAGCATTC  
 GTTCCGCAATGTCGGGTTGAAAGATAAAATCTGCATAAGTGTTCCTTTATATGATGGTT  
 TTTCCGTCAAAACAAAGTGTTATAGTGGATTAATTTAAACCACTACGGCGTTGCCCTGCC  
 TTGCGGTACTATTGTACTGTCTCGGCTTCTGCGCCTTGTCTGATTTAAAGTTAATCC  
 50 ACTATATTTTAAACATCGCGCCGCTTGAGAACTGCCAACCGCTTTATAACAAATTCG  
 TCTTTGCAACCAACTTCCATCTTTCCGTTTTTCGGACGGCATCGTTAAAGTAGTCCTT  
 CCTTTTCCCTATTTCAGCATTGTTTATGTAGCGCTCAAAAGCCCGGCGTACCTGCC  
 GGCTTCAAACTCAGCCTTGGTCTGACCGTATTGTGCTGTCGCTGCTGTGGTCTTGGCG

TTTGCGATGATGGCGCGAAGGGCGGAAATCGGCTGGGGCGGCTTTTGAACACGATT  
 GCCGAGCCGAACGTGTTGGCGGGGTATGGCTGAGCTTGGCGGATGTCGTTTATATGCGATG  
 CTGACCAATATGTCGTGTTCCGCACGCTGGTGGCGTGGGTATTTGGTGCATTATGAATTCGCCG  
 GGCAAGGGTCTGGCGAACGCGCTGGTCGATTGGCCGTTTGGCGCTGCCGACGGCGGTTACG  
 5 GGTATTCGCGTTGGCAACCTGTATGGCGCCACAGGTTGGATAGGCCSTTTTTCGAGCCCT  
 TTGGGCATCAAAATCGCGTTTACACCCGTCGGCATTTGGATTGCGCTGGTCGTGCTGACG  
 CTGCCCTTTATCGTCCGCGCCGTCGACGCGGTATTGGAAGAATTGTCGGCGGAATATGAG  
 GAAGCGCGGCAACTTTGGGCGCAAGCCGTTGGAATACGTTTTCGCGGTGCTCTTTGCTT  
 10 GAAATCACACCGGCACTCTTGACCGCGCGGGAATGATGTTTGC CGGGCAACGGGGGAA  
 TACGTTTCGGTGATTTTATCGCGGGCAACATTCGATGGTTTCTGAAATCCTGCCCGCTG  
 ATTTATACGGGCAAGCTGGAAACAGTTCCGACGTGCAAGGCGCGCTCGGCGGTGGCGTTGTTT  
 ATGCTGCTGGTTTCGTTTGTGATTCTGTTTGGCTGAACGTGATGCAAGTGGCGTTGGCG  
 AGGCGTTCCGGCGCGAAGGGTTGAGGTGCTGTGAAATACCTGTTACCGCTCATTTCCGCGCG  
 AGGCGGGAATCCATTGGTGAATTCGGCTGCTTATTTATTTCTGTTTCTGTTTGGCG  
 15 TGCGGTGGATTCCGCGCTGCGCGGAATGACGCTAGCTAGACGTTTTTATTTCCCTTAATC  
 AATAAAAGTTGTCTGAAACGAATCCGCCCACAAAAACGGTTTTTTCAGACGGCATCC  
 AAAATTTTAAACAACAGAGAACACCCGCCATGAAACCTTATCCGCCAATCCCA  
 ACCTGACCGAACCGCGCGGCTGGCGGTGTTGCTGATTGCGCGCGCGCTGGGCTTTCTGCG  
 TGCTGATGCTGGTCGTGGCGCTGCTGCGCGTGTTTTACGAAGCCTTAAAGGCGGTGGG  
 20 ATTTGTACCTGAAATCCTTAAACGATCCCGAAGCGTGGTCTGCCATCAAAATGACGCTGA  
 TTTCCGCGCTGATTGTTGTTCCCGCTCAATGCGGTATTGGGTGTGGCGATGGCGTGGCGTGC  
 TGACCGCTTTTGATTTTTCGCGGCAAGCAGTTGCTGACCAACCTGCTCGATTTCGCGTTT  
 CCGTATCGCCCGTGGTGGCGGTTTGTGTTGCTGTTTATTTGTTGGCGCGCATACGGCAT  
 TGGTGGCTGGCTCGAAGCGCAAGGCATACAGATTATCTTCCGCAATCCCGGATTTGTTT  
 25 TGGCAGCGCTGTTGTTTACCTTCCCTTTTGTGCGACGCGAAATCATCCCGCATGACGAGG  
 CACAGGCGACAGCGAAGAACAGGCGGCATTGATCTCGGCGCAAGCGGCTGGCAGATTG  
 TTTGGCGGCTTACCTCGCCAAACATCAATGGCGCTTACTCTACGSCATCATCTCACCA  
 ACGCGCGCGCGATGGGCGASTTCGGCGCGGTGAGCGTGGTATCGGACACATACGCGGCG  
 AAAACCAACACCGTCCCGCTTTTGGTCGAAATCTCTTACAACGAATACAACTTCACCGGCG  
 30 CATTCGCGCTCTCCGCGGTATTGGCACTTTTGGCACTGGCGACGCTGGCGGTGCGAAGCA  
 TCATTACCAAAATTAAGAAGCAAAAACCTGCGCGCGCGGAAAGGAATGCAATATGAGTAT  
 CACCATCCRAAACTTAACAACAACTTCGGCAATTTTCAAGCGCTGAAAACATCAACCT  
 CAAGCTCCCAACCGCAAACTCGTTTCCCTGCTCGGCGCGTCCGGCTGCGGCAAAACCACT  
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 35 GCAAGAGCTAACCGCAACATGTGCGCGAGCGCAAGTCCGCTCTGTTGTCACACATA  
 CGCCGCTTTTCGCGCATATGAAGCTGTTGACAACGTGCTTTTCGGTTTGACCGTATTCG  
 CAAGTCCGAACGCCCGTCCAAGGACAAATCCGCGSCCAAAGTCGAAGAATTACTCAAGCT  
 CGTGCACTCTCTCATTTGGCAAAATCCTATCCGACCAACTCTCCGCGGCGGACCGCA  
 GCGCATCGCCCTCGCCGCGCGCTTGGGTGCAACCCAACTCTTGCTTTTGGAGCAACCT  
 40 CTTCCGCGCGTTGGATGCCAAAGTACGCAAGAAATTACGCACCTGGCTGCGCGACATCCA  
 TCACAACTCTGGGTGTAACACGATTTCTGTTACGCAAGCACAAGAAAGCCCTCGAAGT  
 TTTCCGACGAATTCGTCGTGATGAACACCGCAAAATCGAACAACCGGACGCGCGAAG  
 TATTTACCGCAAAACCGAATAATGCTTTCGTTACCGAGTTTCTCGGCGAACCAGCGCTTT  
 TGAAGAGCGCATCGAAAAGGCTTTCGTCATTACAACGGCTTCGCGTGGAAATTTGGACGC  
 45 GCAATACAAATGGCAGGAACAAACCGCACCGGCTATATCCGCGCGACGAATGGCAGAT  
 CGCGCGGCAACACGAACACCGATGATTTTGCCGGAATCGAAAATTCACCGCGCTCGG  
 CGCATGACGCATATCTGTTAAACACGACGAACAGGACGTACATATCAGCTGGCAG  
 CAGCGATCCGCGCGTTACCCAATCGCCGAAGGCAAGAATTGAAGCTGATTCGGAACA  
 GGTATTGTCTCTCTCAAAACGAATGATTGAATATTTCGATTAAACCATGAAAGCGCA  
 50 TGGCTGCTGAAAGGCTTTCAGACGGCATTGTGCTTTCAAGCGTCAGGCAAGAAACAGCTT  
 GTAGCGGGCATTTTGGCTTTCCTGTGATAGCTGTATCCCAAGCTTTCGAAGAAACCGCT  
 AAATGGCGGGCATCTGTCGCGGCGCACATCGATACCGACCAAACTCGCGCGTAACTCCG  
 ACCGTGGTTGCGGTAATGGAAAAGCTAATATTCACACCTCCCTGCATATGGTTCAAAA  
 GCGTGGCAATGCCCGGACGCTCCGGAACCTCAAACTGACCAACGCTGTTTCTTAC  
 55 TTTGTCGCTCCGCCCTCGACCATATAGCGGATATGGATTGGCAATCTCATTTGTGGT  
 CAAATCGACATTTGGGCAATCCCGCTCATCCAAACCGCTGCGGATAACCGCAATCTCG  
 CGGCGCTGCGCGTTGAAGTCGCAAGATATGCGCTTTTTCATCGCTCCGTAGCGGTA

GTTGAAC TCGGTAATATTCCTATT TCCCAATATATTGACAACTTAAGGAAGCTGCCGG  
 TTCTTCAGGGATGGTAACGGCAAAAATACCTTCGTTGCCCTCGCCCAATTTCGCTCGGTC  
 CGAAACGCTGGCGCAAAACGGTGAAATTCATATTTCGACCCGCTGGTAACGGCAATACGGGT  
 5 TTTGGTTTCGCGCCTTCTCGGGGATATAGGCTTCAGACCCGCCAACGCCACGCGCC  
 CGCGGCTCGGTAATGCTGCGCGTGTCTATCGAAAATATCCTTGACCGCGCCGCAAAACCGC  
 ATCGGTATCGACTGTAATGATTTCATCCAAAAGTCTTTTCAGAGGCGGAAGGTTTCGTT  
 TCGACGACTTTGACCGCAGTGCCTGTGAAAACAGCCCGACATCTTCAATGGACGAT  
 TTCACCCGCTTCGACGACTGCTTCATACAGCAGGAATCGTTGGTCTGAACGCCGATTAAC  
 10 TTTGATTTCGGGACGGACCTGCTTGATAAATGCCGCCACGCCGCCGCCCAACCGCCACC  
 GCTTATTCGGTACGAATACGGCGCGGATTTGGATCGGGATGCTGGCTGACAAATTCCTATCCC  
 CACCGTCCCTGTCCCGCAATCACATCAGGATCATCAACCGCGCGATATAGGTTAACCC  
 TTTCTTTTCGCGCAACTCCATGCGATAATCGTAGGCATCGTTGTATGAACGCCCGCCGAA  
 AACCCACTTCGCCGCCATGGCTTTTAACCGCATCCACTTTGATTTTCGCGTAGTCTCCGG  
 CATACAGCTAACGGCACGGCAGCCCAACGCTGTGCGGCAATGCCACGCTTGAGCATG  
 15 ATTGCCCGGCTTGC CGCAATCACGCCGCAAGCGAGCGCATCTTTCCGCACTTGGACAT  
 TTTGTTGTACGCGCGCGGTATTTTGAACGAAAAACCGCTGCAAACTCTTCGCGTTTCAA  
 AAGGATGTTGTTTTCAAACGTACAGAAAGGCTGCGTGC CGGTTCCAAAGGCGTTTCGAC  
 CGCCACATCTAGACAGATGCGGTGAGGTAGGATGAGGTATCGGAATGAAGAACGG  
 CGTGTTCATAATTCAATATGGGATAATCGGTTTATTAAATCGCAAAACCCAAACCATA  
 20 CGCCCAAGACGGCGGAAATCAAGAAAAATCGGCCGATCAGACACCTTAAGCGTATAAT  
 CGCGAGACTGAACACGCGCACAAATAGAAATTTTCATGACGACACATAAAATCTCGGCC  
 GTCTGTCTTCCATCATCTTAGGGTTTTCACGCAACGGCTGCATCGCCCGCGCCCAAC  
 AGACCGACGGTACACGCGCGCCCAACGTTCCAAACACCGCAACCTCACAGCGGCACAC  
 ATCGTTATCGACCTCAAAGCAACAGATTTTATCCGCCAAAAACATCAATACCCCTGTT  
 25 GAACCGCGCGCACTAACCCAACTGATGACCGCATATCTGTTTTCAAAACATGAATCG  
 GCAATATCCAATCTGAAGAAAACTTAAAAATACCCGAATCCGCATGGGCTTCAGAAAGGA  
 AGCAGAATGTTGTAGCTTCGCGCGCATACGGTCAGACCGCAAACTCTTAAAGGACATG  
 ATTGCATATCCGCAAAAGATGCCGCCCTAACCCCTTGC CGCGCGGCTGGGCAACGGCTCG  
 ATTGAAATTTTGTGCAACAAATGAACAAAGAAGCCGACCTTGGGCAATGAAGAACAT  
 30 GTATTCAAACCCGACAGCGCTTAGTAGAGAAGGACAGGTTTCACCGCCAAAGACCTC  
 GCCCTGTCTCTGAAGCATTGATGCGCGACTTTCGGGAATATTACCGCTGTTTTCATC  
 AAATCTTTCAAATTCAAAAATATAGAACAAAAACACCGCAATATCCTTTTATATAGGGAC  
 AACAACTGTAAACGGTCTGAAAGCCGCGACACACAGAAAGCGCGGCTACAACTTTCCGCTG  
 TCATACTCGGCAACGGCAGGCACATCTTGTATCATTGGGTTTCGGAATCGGCGGCAAC  
 35 ACACGCGCATCAGACAACAGCAGCTGCTGAAC TGGGCAATGACAGGCTTCGATACGCCC  
 AAAATATTCGAAAGGCAAAACCGTTGCCCAATCCAAATTTCCGGAGGCGCAAAAAA  
 ACCGTCGCGCGAGGCTTCCTCAAAGAAGCTACATCACTTGCACATAAAGGAAGCGAAA  
 ATGGGACAGCAAAATTCAGAAACCATACAGCGGATTCGCGCCCGAGTAAAAAAGGCGAAA  
 ATTTAGGAAAAATCAAATCAGACAAAGCGGATACACCATTTGCCAAAAAGAAATCGTC  
 40 GACTGGAATGTAAAAAAGAAGCCGCTGGCAAGGCTTTGGCGGTGCTGACAGGG  
 CAGTAATCTCGGCTTTCAAATATCCGCTTTTTCACCAAAATAAAGAAATGCCGCTTGAAA  
 CAGGCTCAGACGGCATAAAAACAGCGCGGCTAGCTATTGCATACGCGCGCGCTGCTG  
 CTGAAATCAATTAGCGTTTCTTACCGGTAAACGCTAGCGTACAGCAGGATTTTCGTTAGCT  
 TCAGGGAACGCTTTTACACCTTCAGGCAAGTTGATGCTGACAAAGTGCAGAAATGCGC  
 45 CGGCAACCACTTCAGCACAATCCAAATCCAAGAAAGCAGGATTTGGCGCGCAAGCA  
 CTACTTCAACAGAAGTGTTAACAGAGATACGCGCGCGCTTCGAGTTGACCGCTTGGG  
 AATTTTCAGCGTTAACGATGTGACGGGGAACAGGATGCGTACAAGTTGATCGGCTTCA  
 CAGCTTGAAGTGCATGTGTGAACCTTCGCGCGGGAACGGGTGCATTTGGAATTCACGGA  
 CGATAGCAAGCTTTGGTTTACCCTTCAGAGCAACATTAATCAACGAGTATGGAAGATTT  
 50 CTTTTCCAATGCGTAGAATACGGTTTGTGATCCACAGCGATTCGAACAGGCTCTTGAC  
 CTTACCGTACAGAAATCGCGGGATTTCGCTTCGCGAGCGAGCGCGGCTCGCACAGG  
 TGCTTGTGCTTCAGCAACAGAGGCTTGAAATTCATAAGTCATGTTAAATCTCCAAGTT  
 AGGTAAATCGCGCTCATCGCGCGCAGCAGCTTAAGACGGCTTCGCGCTTATGGCAGCA  
 ACATGCTGCGCTGCATCACTTCTTCATTGAAAAGATATGAGACGATTTCTCATTTGCTAA  
 55 TCGCGCGGACGGTTTCGGCCAAACAGACCGCAATCGTTACCTGACGGATACGCTCGCAGT  
 TTTTAGCCGCTTCAGACAAGGAATGSTATCGGTTACGACCCTGCTCGATTTCGGGATG  
 AGGCGATACGGCTGACCGCTCTCCGGAGAAATACGGCTGGCTGGCATAGCTAGAACAC

GTTCAGCCCCCGCTCTTTTCAGGGCGACGGCGGCTTTGCACAGCGTATTTCAGCATGTCAA  
 TCATATCGTCCCAATCAGACAGGTTCTACCTTGAATATCGCCGATGATGTTTCATGACTT  
 CGGCCAATTGGCTTTCCGGCGGCGTTTGTGATGATTGCCAAGTCGGCATTCCAGGATT  
 5 TTGCCACGGCGCGGGCGCGGACGACCCGCCGATGTCGGGCTGACGACGGTCAGATTTT  
 CAATCCCGTGTGTTTGTATGTCGTTCAACAGAAATCGGGGTGGCATAAATATTGTCCACCG  
 GAATATCGAAGAAACCTTGAATCTGGTCGGCATGCAAAATCGACAGTCAAAACACGGTCGA  
 TCCCTGCCGAATACAGCATATTGCCCACGATTGGCAGAAATCGGAACGCGGACGGAAAC  
 GCGGACGGCGGTCTTGCGCGCATAGCCGAAATACGGAATGGCTGTGTTAATACGACCTG  
 10 CCGAAGCACGCTTCAGTGCATCCGCCATCCTCAGSATTTCACAGGTTGTCATTGGTCG  
 GCGCACAGCTCGGCTGAAGGATGAAAACATCGCGCCCGGTACGTTTTCCAAACAGTTTCSA  
 GCGCAACTTCGCCGCTTGAAAACTTGGATACGGAAGCATTGCCCAAAGAAATGTCCAAAT  
 GCCTGACCAACAGCTTGTGCCAATTCGGGATTGGCATTGCTGTAAATACCATCAAACTGT  
 CGTACGACGCCATACTCTACCTGATTTATGTTTAACTTCGCTCAGAAAACACAATGC  
 TTC

15

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 82>:

### GNMCB20F gnm\_82

GCAGGTCGACTCTAGAGGATCCCCAGCAAATGGGGCAAGGTTCAAATAGGAACACCATCT  
 CGAGATTTTGGCATATCACTTTAGATAGTGGCGATGGATATGCCGTTTCATGCCATCAT  
 20 CCGCAAAATTTTACGCTAATCCTAAAGAAAGAGGATTGGATGAAGATTTCAAATTCGGT  
 ATCGAAGGGCGCTCTCATCGCGATTGTGATGCTGAAGAACCCAAAGTTATCCATATCGAA  
 GATAACGCACCATTTGAAACCCCATGAAACCTGCTGCCGTTTAATCATCTACTGATGAT  
 TACTTTAGGCAAAATGTGCCGCTCCCTCCCTTTTCAGACGACCTTCATTGCGGAAACCGCC  
 GCAAGGTTGTCTGAAACCGGTTTTCATCCCGCTTTTACAACAAACCGGAAGCCCCAC  
 25 ATGATCTCTTTGAAACACGACACTTTCCTCCGCGCTGCTCAAACCACTGCTCGAATAC  
 ACGCCGATTTGGATGATGCGCCAGGCGGGCGTTATCTGCCCGAATACA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 83>:

### gnm\_83

CGCGGAAGCGCGCCGCGAAATCGCCGACTTTTTAATTGATGCCCGCGCTTCAGGCGAAA  
 AATGGGTCTTGAACGGAAAGCCGGTAATGTTGCTTATCCGAAATGTTCCAATTTTGAGC  
 AGATCAACAGGCTTCTTATGTCGGTTCGACGGTTTAAATCTGTTCTGATGATTTAGG  
 30 GCTCAGGCTTTTGATTAATTTTTAAAGACATGGGCAAGGTTGGGATTGATGATGGT  
 TATTGATTTTGGTTCTCTCGGTTTCTTCTGGCTTTGCTGTGCGCTTTGATATTTAA  
 ATGACGTGTTTTAAATCAGGCTTTCAAAACCACTTTGAAAGGCAGAACATGAACAAA  
 35 CGGTTTATACGCGAGGCGCAGTTGGCACTTTATAAATATCAGCCGTCAAGCAAGATTAT  
 GGTAAACCAATGGCATACTTTCGCTAGTGAGCTTTTGGATTATTCAAAAGTTAATAAAA  
 TTTATATTCATGAAGAAATCCAATGTTTTTAAATAGAAGGATTTCTAATAATATTTGG  
 AAAATTATTTTCTGATGAGTCTGTTGCGTATATAAAAATTTTGAATATACAGGATGAT  
 40 TATAGTCGTGGAAATGAAATAAAACGTTTGATTTTAACTCCTAATGTTGGGGATGTTTTC  
 GGTAACTCTATGCTGAACGCTTTTAAATATCCTATTGAAATTCAGATTTAGATTGGA  
 TATTGATCATAAAAATCTGTAGTTACCGATTTTCGTTGATGGTCAGCGTTTTCAGG  
 TCGAATATCGAACCTTCAATAATAGAACACGTGCCAACAGGTGCACGCTCTCTGAAAAA  
 45 ACTCCCGCTTAAATTTACCGCATCAGTTTCCCGCGCGCGCTTGTGTCAGGAGTCGGCAA  
 ACTTGCCCGCTTAGGCGCGAAATTAAGCACAGGGCGATTCCTTATGTCGGAACAGCCCT  
 TTAGCCCATGACGTATACGAACTTTCAAAGAGACATACAGGCACAGGCTACCAATA  
 CGACCCCGAAACCGCAAAATTTGTAAGGCTACGAATATAGTAATTCGCTTTGGTACGA  
 AGACAAAGACGATTAATAGAACCTATGGCTGCTACGCGGTTGACAGTTTCGATATGCG  
 50 CCTATGTCGCGATGACAGCAGATTCCCGCAAGTCAAAGAATTGATGGAAAGCCAAATGA  
 TAGGCTGGCACGTCGCTTTTGAATTTGGCATAAAGAAAGACTGAATAAATTAAGTTCTTT



GGATTGGAATAATTTGTGTTTAAATCGTTGCACATTTAATGGAATGGCGGAGATTGTTT  
 GGTCAATAAAGGTGATGATTTCAGAAATGGGGCTGATTTTCCCTTATTCGCAATTCAAA  
 ATACAAAGAAGAAATGGATGCCAAAAGCTGGAAAGAGATTTATCGTTGAAAGTCGATGC  
 CAATCCCCGACAAATACATAAAGGCAACCGGTTATCCCGGTTATTCGAAAAAGTAGAAGT  
 5 CGACCCCGGAACAAAAGTGAATATGGGTCCCGTCACGGACAGGAACGGGAATCCCGGTTCA  
 GGTTCGCGCAACATTCCGCGAGGATTTCGAAGGCAACACCGGTGGATGTTCAAGTAAAT  
 CCGCGGTCGCGACTTGACCCCGGAAGCGGGAAGCAGCAACCGCAACGCGCCGCCGGA  
 AGTATCGCCGCCGAAACCCCGCAACCCGCAACCCCAATGAGAACCCTCGGCACGAG  
 CCCCXAATCCGGAACCCGACCCCGATTGAATCCCGATGCAAAATCCCGATACGGACGGACA  
 10 GCCCGGCACAAGACCCGATTCCCGCGCGTTCCGGGACGGCACAACGGCAGGGACGGCAA  
 AGACGGAAAGGACGGCAAGATGGCGGCCCTTTGTGCAAAATCTTCCCGGACATTTCTCGT  
 TTGCGACAGGCTGCCGAGTCCAATCCGGCAGAAGATTTAAATCTGCGCTCTGAAACCGT  
 CAATGTAGAGTTTCAGAAATCAGGAATCTTTCAAGATTCCGCACAGTGTCCCGCACCTGT  
 CACTTTCACAGTGACTGTGCTTGATTCAAGCAGGCGAGTTCGCGTTTCAGCTTTGAGAACGC  
 15 ATGTACCATAGCGCAACGGCTAAGGTACATGCTTCTGCGCCTTGCTTTGGCGGTTGCGCG  
 CTTTTTTTGATATCCGCACAGTATCTCGTGAAGTCTAGCAGGCGCAGCACCGCGCGGCTTC  
 AGTAACTGTACCAAGGCGAGGGGAGGACGCTCCAGAAAGATTGTAAAGACGGCTTTTATC  
 GTCTTTTATAAATCTTTTGGATACCCCTTGCCGCCGCCAAAGAACACATTTCTGCCGC  
 AAGGCGAGGTGGTAAGGCGCGCGCTTTTGGCGCGTCCCATGCCCCGCGCGCTCGCAA  
 20 GTGAGACTAGGSGGTGCGGGGACTAGTCCCCGCCAAAGCGTTTCAGCTTCGGAATTTTG  
 GCCGAAAGGCGAGCGGAAGCAGCGCATTTGCGACGAATGTGCAAAATAGCCGAAGCGC  
 GGGGGGATTTGGCGATAAGCGCGAGGGGGGTGTCGCCACAGCGCGCGCGCGCGGAATCG  
 GCGCGCAAAATCTTTAGATTAAAGAACATTTGTTTAAATGAGGCAACCGGTGCTTTTAAAG  
 AAGGATAGCAAAATGAAATGTTTGGCGCATTTGATTCGCTTTTGATGAGCGTGGCAGGCA  
 25 CGTATATTGACTGCATTAGGCTTGATGGCGGTAACTTTCAGGGGTGGATAGATTGTTA  
 GCCCATTTTCAGCAGGCGGATAACCAATAGCATAAACGGGCGCGCTCAAGCGATGTTGCGA  
 CTTTTTTATATAAGCGCGGTGGAACCGCTTTTAAATCTCTGTTGGCGCGATCGCCTTT  
 ATTTCTGTCATTCAACAAATGCAAACTAGCAACCTCAATCGGAAGAAATAATATG  
 GCAGAGATCTGTTGATACCGGCGACGCCGCTTCAGGGAACCAATTAATAATGGTTTCC  
 30 ATGATGGCGAATGATGAAATGTTTAAAGCTGATGAAACCGGCATACGCGTAAAGTATTT  
 ACGARCATAAAGGCTTGAAATACCGCACACCTACATAGAACGGACGCAAAAAGCTCG  
 CCGAAATCGACAGATGAGCAGCTTTCCGGCGATGATGTACGAATGGATAAAGAAAGCCG  
 GAAATATCGGGTCTATTGTCAATTGTAGATGAAGCTCAAGACGTATGGCCGGCACGCTCG  
 GCAGATTCAAAAATCCCTGAAATGTCCAATGGCTGAATACGCACAGACATCAGGCGATT  
 35 GATATATTTGTTTGTACTCAAGGTCCTAAGCTTCTAGATCAAAATCTTAGAACGCTTGT  
 CGGAACATTACACATCGCTTCAAACAAGATGGGTATGCGTACGCTTTAGAATGGAAA  
 ATATGCGCGGACGATCCCGTAAAAATGGCATCAAGCGCATTTCTCCAGTATCTATACGAG  
 GATAAAAAAGTTTATGACTGTAGCAATCAGCGGAAGTTTCATACCGTAAATAGTCAATG  
 CGGTCAAAGTGGTTTACTCTGCCAGTAAATAGTATGCTGATTCCCGTGTGTTGTCGCG  
 40 CTGCTCTATAAAATGTTGAGCAGTTACGGAIAAAGCAGGAAGACCCGACGACAAGAA  
 TCSCGCGCAACAGAACAGCAGGCGAGTACTTCGGGATAAAACAGAAAGGCGAGCGGTAAAT  
 AACGGCAACCTTACCGCAGATATGTTGTTCCGACATTTGTCGGAACCCGGAAGCAAG  
 CCGATTATAACCGGTGAAGGCAAGTAAAGACCTTTGAATATATAGCAGGCTGTATAGAA  
 GCGCGAAGAACCGGATGCGCTGCTATTTCGATCAAGGACGCGCATTTGAAGAAAGTGACG  
 45 GAGTTGATGTGCAAGGACTATGTAIAAAGCGCTTCGCGTTTAAACCATACAAGAAGAA  
 AGCCAAAGGCGAGGAAGTTCAAGCAAGCGCGCAGCAACATTTCGGAAGGGCGCAAGTTGCC  
 ACATTTGGCGGGAACCCGTAGCAGAACCTAATGTACGATAATTGGGAAGAACGCGGGGAA  
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 AGAAAAGAGACCCGTAAACCGTTTGAATATAGACGGTTTACGGGCTTTGTTTCGCGCAA  
 50 ACGAAGGGCTAAGGCACTCAGCGAGCAATCCCGCAATGTATTAAACAGACGCGTAGAA  
 ATGCCCGCTGCCCTTATCCATCCCTGAAATTTGAATATCATCTTAGCCGTATCAAGGCTGT  
 ATAAATAAAGAAAAATACCAATGAATATAATCGGCTGGACATCTCAAAGGACACCATAGA  
 CGCAACATTCGATAAAACAAACGGAAGTATCCATTACATTAATTTAAGAAATATATGATGA  
 TGGATTAAACAGCTTTAGATTGTGGATAAAGGGAAACAGAAATCAGAAAAGTCTATATCGG  
 55 CATCGGAGCAACAGGCATCTATTACGAAAAGGACAGCAGATATGCTTTCTCTCACTATAC  
 TGTTTACGTTATTAATCCCTTAAAAATCAAGGACTACGGAAGACAGGTTTAAACGCTAC  
 CAAAACCGCAACAGCAGATTCAACCTGATAGCAGACTACATAAAGGCACTCAAGATAC

ATGTGATACCGTATCAGATACCCAAAAACAAAGCACTGCAAAAACCTGATTAACTTTAAAA  
 TCAATTTACATCAACATCAGAAGCAAAATTTAAACCCGCTTCATAGCACTGAAGAGAGACTT  
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 AATAGCCATATCCGAACAAATCAAAAACAAACGGACAATAACCATTACCGCAATCTTCA  
 5 AACCATCCCGAGCATAGGCAAAAGACACCGCATAGTTCTTTATGCGCAACTGACAGAAAA  
 ACATTTTAAACCCGCAACCAAGTTTGTATCCTATGCGGATTAATCCCGCCATCATACA  
 ATCAGGACACAAGCGTAAGAGGTGCGGGCAGATTGAGCCGATACGGAAACAGACGATTAAA  
 AATAGCGCTGTATATGCCCGCCCTTTGTGCTTACCGTTTAAACGCAITTCGGAAATTAAT  
 AAATTAATCTGAAAAAGCGGGTAAGCCAAAGATGGTAATCATCGTTGCCATCATGCGCAA  
 10 ACTGCGCAAGCTCGCCTATTACATTGTTAAAACCGCCAGCCTTACGATGCGGAAAGACA  
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 GTGCATTTGCATATCGTAAATAAACGTAATAAATAAACAATAAATCAGTATATTGC  
 AACTTTGTTTTTTATTTTGTGTTGACGGGCAACATATCATCTGCGCGGAATGACGGG  
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 15 CGAAAAGTGGTGGGAATGACGTTTCAGTTGCTGCGGTTATTGTCAAGTTTCGGTTATGTT  
 GGAATTTCCGGAAACTTATGAATCGTCATTCCCGCGCAGCGGGGAATCTAGAATTTCAAT  
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 AATCTAGAAATGAAAAGCAGCAGGAATTTATCGAAATGACGAAAACCTGAACGGAAGTGG  
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 20 ATGACGGAAGTGGCGGGAATGACGGAAGTGGCGGGAATGACGAAAAGTGGCGGGAATG  
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 ATAGTGGATTAACAAAAACCAAGTACGGCAAGGCGAGGCAACGCGCTACTGTTTTGTTTA  
 ATCCACTATAATTAAGGGGTATCGGCTTGTGCAACGGAAGCCCAAGTTGTGCAAGACA  
 TATTTGAGTTGCAAGCTGGTACGATGCGGTAGCGAGGAAGCGCGCATAGTTGGACGAG  
 25 TCGCTCGACCCGATAGACGCGCGCTGCAAAACATTTGCGCGTTGGCATTTGCCGGAGAA  
 AGCAGGCTGCTGTTGAAATCTCCGTCATTCGCAATCAGCCCGTGCATATCATAAACG  
 CCCCAGTAGTTCCGGCGGCCCTTTGCCGACATCGTGAGGCGCTTTCCGTCGCGCTCGGCA  
 TACCAATCGAAGATAGTCGCGTTGAGCCGGGTCGTTTGAGCGGTTTTCTGCGTGGCG  
 GAAGCAAGTCCGGCAATTCCTTCCATTCGTCATGGTGGCGAGGCGTTTGCCTTGTGCGGCG  
 30 CAATAGCGGTTGGCGCAACAGGAAACATTTGGTTACCGGTTGTTTTAATTCGCCCGCC  
 TTCGCGCATAGCTGCGGCTGCCGTTTTTCATCCCAATGCTTCAGGTAAGCGGGTCTCGCC  
 TGTITGGAACCGATCCTGCTCTTTTGCCATTGGGGGTGGCTGTTGACAAATTCGGGAAAC  
 TCGGCATTGGTAACGGGATATTTATCCAGTTTGAACGGTTTGACTTTAATCAGCGCGGTA  
 TCTTTTTTTCAGATAAAGCGGCGGTAGCTGCCGCCCTTCGATTGAAACCATTTCCGCGAGCC  
 35 GCGGCTTGAGTGCCGCGGAGTGCCGCGCGGAGGAAAAATAACCGGACATCTCTCATAAAG  
 CTTCTCGCAGGCGGTTAAATCAATCTCCGAAAGGAAAGATTGGTTGTAAAAAACA  
 CCGCGTGCGTAAAGTACAGCGGCGAGTGGTTCGTCGCCGTAATGACGGGTATCCAAT  
 TTAATAAACGCTTTTTTCGATGTCAGAGGCTGCCGGGGCAGAAGCTGCGGGAGCGGAAG  
 AGCAGGAGCTGCACCGTTACCGGCGTAAGCGGTATCACTCAATTTTGAGTCATGATTC  
 40 AGGCTTTTCTGCACCTTCTACTTTCAATTGACCCAGTGGCGCTTTGTTGAATGCGCGGAA  
 GATAGAGTGGTCAACCAAAGTGTAGCTGCCGCGGATGTCGACTTTGAATCGACGATGGC  
 AGAGCGCGCGGCGAGGAACGATGGTGCTTTGTACGTTTTGCTTAATCAGTTTGCGCCCTTC  
 AACATAAATTTTGTGCAAGATTTCGCCGATGACGTGGAAGGAAGATACCAAGTTTCGGAC  
 45 GCCGTTACCAACGTACATACGTACAGTTTTCGCGCTTTGGCTTTACGCGCGTTATTCGCC  
 GGCGATAGCACTACGTGACCGTTGAATACGAGCTATTCAGGCTGTTGCGCAACGGCTTT  
 GTCCATATCGAACGGTTGCAGACCTTGCGCGCTTTTTTGCTTTGGTGTAGAAGTTCGCC  
 TTGACGATGTAGAATCTTTATCCACTTTCGCGAGGCGCTTCTTTAGGCTCGACCAAAAT  
 CAGACGCTACATACCGTTGGCGATGTGCATACCGACCGGTGCGAGCGCGCAGTGTAGAT  
 50 GTACACGCCCGGTTGCAAGGCTTTGAAGCTGAATGTGAAGTACGGCCCGGAGCGGTA  
 GGTTCGCGCGCGCGCGGCCCTTGGCGGTAGCCGCGTGAAGTGCAGGTTGTGCGGAAC  
 GGTAGAAGAGGATTGTGGAATAATCCACTCAACCGTATCGCCTTCGCGTACCGGAT  
 CATACGGCCCGGAACGTCGCGCTCAATGTCAGTAGCGGTATTCACACCGCTCTTCAT  
 GGTCAATGGTTTTTTCGACGGTTTCCATTTTACGCGACTTTGCGGGGTAGTTCGCGGT  
 GATTGACGAGGCACTTCGGGAGCGTGGTGGTAACCGCATCGATAACGGGCACTTCGC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 84>:

**gnm 84**

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5  GTCGACTCTAGAGGATCCCCTGCGGATTATTACGATATTACCGTATTAGGCGCCGACCG
   ATGCGCCCTGCCCGCCGAAAACTTTGGAGAATCCAAAAATGTTTCATTTTGATATTTC
   TTCACAACTGCGCTGCGCCAAGCGATAACCGATGCTACCGCGTAATGAAATCGAAGC
   CGTACAGGATATGTTGCAACGTGCACAGATGAGCGACGAAGAGCGCAACGCCGCTCCGA
   GCTTGC CGCGCTTTGGTTACCCAAAGTCGCGCGCGCCGACCAAGACCGCGCGCTGGA
   TGCGCTGATGCACGAGTTTTCTACTCTCCAGCGAAGAAGGCATCGCGCTGATGTGTCTGGC
10  AGAAGCCCTGCTGCTATCCCGCACACGCGCCGCGGACCGCTGATTGCCGCAAGAT
   TTCAGACGGCACTGGAAAAGCCATTGAAACAGACGCCCTTCCCTCTTCGTCAATGCTGC
   CGCTGGGGCTGCTGATTACCGCGCAACTGACCGCCACAAACGACAAACAAATGAGTTTC
   CCGCTCAGCGCGCTGATCAGCAAAGCGCGCGCACGCTCATCCGCAAGCGCTAAATTA
   CGCCATTCGCGCTTCTGGGCAAAACAGTTCGTAAACCGGACAGACCATGAAGAAGCCCTGCA
15  AAACGGCAAAAGAACGCGAAAAAATGGGTACCGCTTCTCCTTCGATATGTTGGGCGAAGC
   CGCTTACCCCAAGCCGATGCCGACCGCTACTACCGCGACTATGTGCAAGCCATCCACGC
   CATCGGCAAAAGATGCGCGCAGGACAAGCGTTTACGAAGTAAACGTTATTTCCGTCAAACT
   TTCGCCATCCATCCGCGCTACTCGCGCACCCAAACCGCGCGTATGGGCGAAGCTGTT
   CCGCGCTGTAAGAAGCTGTTCTTTTGGGTAAGAAATACGATATCGGTATCAACATCGA
20  TGCCGAAGAAGCCACCGCTCGGAGCTGCTTTGGATTGATGGAGCGTTTGGTTTCAGA
   CCGTGACTTGGCTGGCTACAAAGGTATCGGTTTGGTTGCCAAGCCTACCAAAAACGTTG
   TCCGTTGGTTATCGACTACCTGATCGACCTTGC CGCGCCGCAACAAACCAAAACTATGAT
   CGCGCTCGTCAAAGCGCGTATTGGGACAGCGAAATCAATGGGCGCAAGTGGAACGGCTT
   GAAACGCTATCCGACCTACACCGCAAGTCCACACCGCATCTCCTACTCTGCGTGGCG
25  GCGCAAACTGCTTCCGCGCAAGACGCGTATTTCCGCAATTTGCCACCCCAACAGCCTA
   CACTTTGGGCGCAATCTACCAAAATGGTAAAGGCAAGATTTTGAACACCAATGCCTGCA
   CGGTATGGGCGAAACCTGTACGACCAAGTCGTGCGCGCCGCAAACTTAGCGCGCGCGT
   GCGCGTGTACGCGCCAGTCGGCACACAGAAACCTGCTCGCTACTTGGTGCGCGCT
   GTTGAAACCGCGCGAAGCTCGTCTTTCGTCAACCAATCGTCGATGAAACATCAGCAT
30  CGACACGCTCATCCGACGCCGTTTCGACACCATCGCGAAGCAAGGCATCCACCTGCACAA
   CGCCCTGCGCTGCCGCGCGATTGTCAGGCAATGCGGTCTGAAGCTCGCAAGCGTGGGA
   TTTGAGCAACGAAAACGTATTGCAGCAGCTTCAAGAACAGATGAACAAAGCCGCGCGCA
   AGACTTCCACGCCCATCCATCGTCAACGGCAAGCCCGCGATGTGCGCGAAGCGCAAC
   GATTAAAAACCTTCCGACACGACGACATCGTCGGCAGTCAGCTTGTGCGATGCGCG
35  GCTTGGCCCAAGAAGCGTTTGGCGACCGCTTGGCGGTTCCCGCAATGGATGCGACAC
   TGCGCGCAAGCGCGCGCTGCTGCGCGCTTTTCCGATTTGCTGGAGCAGCACACCC
   AGCACTGATGATGCTTGGCTGCGCGAAGCAGGCAAAACGCTGAACACGCCATTTGCCGA
   AGTGGCGGAAGCCGTCGATTCTCGCGCTACTACGCAAAACGAAGCGCAACATACCTGCC
   TCAAGACGCAAAAGCGTTCGCGCGATTTGTCGCCATCAGCCCGTGAACCTCCGCTCGC
40  CATCTTTACCGCGCAAGTCGTTTCCGCATTGGCGGCAGGCAACACGCTCATGCCAAAC
   CGCGCAACAAACGAGCTGATTGCCGGTTATGCGGTTTCCCTCATGCACGAAGCGGGCAT
   CCCGCTTCCGCGCTGCAACTCGTCTCGGCGAGGACGCTGGGTGCGGATTGACCAA
   CGATGCCGCATCGCGCGCGTGATTTCACCGCTCGACCGAAGTGGCGCGCTGATCAA
   CAAAGCCCTTGCAAAACGCGCGCAATCCGCTCTGATTGCGCAACCGCGCGCAAAA
45  CGCCATGATTGCGATTCCACCGCACTTGGCGAGCAAGTCTGCGCGCAGCTATTGAACTC
   CGCCTTGACAGCGCGGGACAAACGCTGCTCGCGCTGCGCATTTGTGCGTCCAAGAAGA
   CGTTGCCGACCGTATGCTCGACATGATCAAGGCGCTATGACGAACTCGTCTGCGCAA
   ACCGATTACGCTCACTACCGATGTCGCGCGCTCATCATGTCGCAAGCACAGCAAACT
   GTTGAACCATCAACAAATGAAAGTGTTGCCAAGTCTACCACGAAGTCAAACCGC
50  CGCGATGTCGATTCCAAAAATCCACGTTGTTGCCGCCATCTGTTTGAATTGAACAA
   CTTCAACGAAGTGAACGGAAGTCTTCGTCGCGCTGACGCTGTCGCGTACCGCGC
   CGACGAAGTGCACACGCTCATCGACCAATCAACAGCAAGGCTACGCCCTGACCCGCG
   CGTACAGCGCGCATCGAAGGCAAGTACGCAATCCGACGCGCATCGAAGCGGCA
   CGTTTACGTCACCGCAACATCGTCGCGCGAGTCTGCGCGCTACAGCCCTTTCGCGCGACA

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CGGTCTGTCCGGCACAGGCCCAAGCAGGCGSTTCGTTCTACCTGCAAAAACGTGACCCG  
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 CAACACGCCTCGAAGCACTGGTTACAAAACACCGTTCAACGCCGAAGAGAAAAAGCCG  
 AGCGGGCCGCTTTGGGACACGCCCGCATCCGACCCCTGCGCCGTGCCGAAACGCTGCTTAC  
 5 CGGACGACCGCGGAGCGCAACAGCATCTATGGCACGCGCCAAACGCGTTTGGATACA  
 CGCGCGGACGACGTTCAAGCCTTTGCGCACTGACCGAACTTGCCGCTCCGGCATACA  
 GGCAGTGGTGAACCCGACAGCCCTTTGGCTTCTACACTGCCGACTTGGAGGTCTGCT  
 GCTGCTCAACGGCAACCCGAAACCGCGCATCAGCCAGTTGCCGCTCTGTGCTCTTT  
 GGACAGCGCGCAACAGGAACTTSCCGCCACGACGCGCACTATCCGATCCCTCC  
 10 TTCGAAAAACGGACTCGACATCTGCAAGTGTTTGAAGAAATCTTTCGACGCTCAACAC  
 CACAGCCGCCGCGCGCAACGCGAGCTGATGGCGGTGCCGACTGATTTTCCGAAATAC  
 CGCGGCGCGGCCGCTGAACCAATGCCGTCTGAAAACCTTTACAGCGGCATTTTATAATG  
 GATTAAACAAAAACAGGACAGGCGACGAAGCGCGAGACAGTACAGATAGTACGGAACCG  
 ATTCACTTGGTGTCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGCGAGGCAACG  
 15 CCGTACTGGTTTTGTTTATCCACTATAACAGCAACCTGTGCGCGCTATTCCGCAAAA  
 GCGGGAATCCAGTCCGTTCACTTTCGGTCAATTTCCGATAAATTCCTGTGCTTTTCATTT  
 CTAGATTCCTCACTTTCGTGGGAATGACGGCGGAAGGGTTTGTTTTTTCGATAAATCTT  
 TGAGGCATTGAAATTCAGATTCCCGCTGCGCGGGAATGACGATTATAAGTTTCCCGA  
 AATTCCACATAACCG

20

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 85>:

#### gnm\_85

TTTGGCGGATCAACCGCCCGGTAGCGGTGAGTTTGGCTCGCTGCCGATGACGCGSTG  
 GCAGGGAATCAGGATAGATACTTTGTTCTGCCGTTGGCGCGGCAACGGCGCGGACGCG  
 25 TTATGGGTTGCCCAACGCTGCGCCTGCTCTTTGAGTGGCGTTTCGCGTAAGGAAT  
 CGCCAAGAGCGGCTCCATGCTGCTTTGAAACTCGGTGCCATCTGCTCCAAGGCGT  
 GGCAAGGTTTTTCAGACGACCTTGAAGTATAAGTCCAATTCCTGCCGCAAAAGTTGCGT  
 CGCTCATCTCCCGAAACACAAACCGTCCGCGCAAGGCTTTTGGACGGCGGCAATTC  
 CTGTTCCAAATGCTTCTGTCGACAAATTCAGCAAAACACAAACCCCTGCTACCGAACAC  
 30 CGCGAGCATCTCGCCAAAGCGGTGGCAATGGCGGCACACACAGCTCGTTCAAACGTGTC  
 GGGATACACGCGCTTCCACAGACGGATGGCGCGGCGGATGCGGACATATTCTTCAGCGCG  
 CGACCGGATATTGCCAAAAATCCCGCTCGAATGTTTGGCTTCGCATTCCGTCAGATT  
 GGGATTGCGGCATAACGCGCACTCAAAACCCGAGATTTCGAGCAATGGCGGATTCATC  
 CCATTTTACGCGCAGATTGTTAAGGAAGCAGGGTAATCATTGTTTGTCTCGGTATCCC  
 35 TATCATAGATTTCAGCGCAAAATCCCAATTTTGGCATTTCGCCAGCGCGGAGCAGGAA  
 CGGCGTATGACGTAAATCTTGAGGGTGTAGTTGCGGCAATACCTAAATATTCGATATTT  
 TAAAGCATCAGAGAAAGGAATGTTCAACACAGGACGACACATAAGCGCCGCCCAT  
 GAAAAATTTTCAGACGACCTGCAAGGGTCTGCTGAAACACGATTTTTCATTTCGCGCAT  
 40 TCTGGCACATCATCAACCGTTTCGGCACATTCCTGCCGCGGTTGACAGCCTATAATGAA  
 TCCACTTATTATCAAGCAAAAGGAATCATCTATGCAAAACCCCTCATCTCTCCGCGCTACT  
 GCTGGCTTTTCAACCGCTGCTTTGCGGGGGCGCATTCACGCTGCAATTGACAAACCC  
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 45 TTCGCTCTGACGTTTACGATAAAGACGCGCGACCGGACTGGGCTGGATGCACCGGGTG  
 GTCGCCGACATTCGCCGCGATGTCACCGCGCGACGCGACTCGCTGCAATTAAGCGCAATTAAGCGC  
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 CGATGTCCGCCGCGCACGCGGCTCGCTGCAATTAAGCGCTGCGCCAACTACGCGCA  
 50 GCACCATTCGCGAGCATATCGCGGTAATCAGTTTGGCGGATTTGCCGCTACAGGTTGAC  
 GCTTCTGACAGCGCAAAACCGATGCGCTCATGCTGCAACAGCGCAACGCGCGGAAAG  
 CGCGGCTTCGCGCAGTATTGTGCGGCACTTCTTATCCGCGAGTACCGAGCTCATATTC  
 AAAGCGCGGCGCCATACGCGGGAATACGCGAGCTTTACCGCATCGCACTGCTGCGCG  
 CGTCCCGTATTGTGCGGGAACCTTCTACGGTTTCTGTTGCAAGCAATCATTGCGG  
 CTGATAGAGCGCTGTAATCGGGAATATTGATGAGTCAACGCTCTGCGGCTGCCAA

GGGCACC GCCCTTACCGCGCAGCTTCTTACTTCCGCGCCGACAGTAAGCACAGCCGGT  
 TCATATACCGCCACGCTCGGGTACAAAGCGGTATGATGTTGCACGATGCCGCTAAAGCA  
 CCCAACTCGTTCGCGGTATGAAAGTATAGTGGATTAAATTTAAATCAGGACAAGCGGACG  
 AAGCCGCGACAGTACAAATCGTACGGCAAGGCAAGGCAACGCCGTACTGGTTTAAATTT  
 5 AATCCACTATATCTCAAACCCACGTTAGGCTCAAGCAATGGTCGGACATCCTTATCCGA  
 CAGCCCATCTTCTTTAGACGGCATTGCAAATTTAAGTTTGAAGTGCCTGCTTCAAATAAG  
 GCGAGTTAATGCGAAGCGAAATTCCTCGCGGTACTGCAACTTGGCCCTCCCTCATAGG  
 GGGAGGTCGGAGGGAGGGTAAACGGGGCAGATACAGACAATATTCCTGTGCCGCCCG  
 ATGCCCTCTCCCTAACCTCTCCACGGGAGGGAATGGATTGCCGTGAAATATCTCG  
 10 CTCTACATAAAATCAATGTGTTATCTCAAACCCACATTAGGCTTAATCAATGGTCGG  
 ATATCCCATTTCCGCAAGCAAGCTGCTTTCAGACGGCATTCCAGGCCAACAAAGCGGCCA  
 ATATCCCTCATACCCGACAGACAGCTTCGGAATGTCGTTAGCGCGACGTTTTTCGTTGA  
 TTTGGTGGATGCTCGCATTGGACGGGCTTAATTCGATAAGTTCTTCGCGCAATGGCTTTGA  
 TGAAGCGTCGGTCCGAAGTCCCGCGGTGGTGGACAATTCGGCCTCAATGCCCGAGGTTT  
 15 CGGCAATGGCTGCGCTGCCACGTGCTGAGTTTCCCGCTTGGGTGAGAAAGGGCTGCC  
 CCGAACACGACCACTGCAAAATCGTATTGCACGCCGTGTTTGCCAAATGGCGTGGACG  
 GTTGTTTCGACCCCTGCTTCGGTGGACTCGGTGGAGAGCGGAATTTGAATTTGACGTTCA  
 GCTCCCGCGGAATGACGTTGGTCCGCGCTGTCGCCCGCTTGATATTGAAATTTGAAGAG  
 TGGTGGCGGGAATATTCGTTGCCCTCATCCGACAGTTCCTGCGTCAGCTCTAACAAAG  
 20 CGGGGCAAAAGTATGCACGGGATGATTGCCAAATGCGGATAGCGAATATGGCTTGCT  
 TGCTTTGACGGTCAGGTTGCCCGACAGCGAGCCGCCGACCGTTTTTAATCATATCCG  
 CCAATTTGCTCCACGGCGGTGCGTTCCGCGACGATGAGTAGTCGATAAGCTCGTCGGCGG  
 CTTTCAATACATCGACGACTTTGGTCGTGCCCTCCACGCGTCGCCCTCTTCGTCGGAAG  
 TAATCAGAAGCGCAATGCTGCTTTGGTGGTGGGATGTTTGGCAACGAAGCGTTCGACGAG  
 25 CGGTAAACGAACAGGCAATGCTGGTTTTCATGCTCGCCGCGCCGCCGCTATATCTTC  
 CAGTCGCTCGGCCGTTGCAACGGGGCGAATCCCAATTTTCGACAGGACCTGTGCGGTA  
 CAAGCTGCGTATGCCCTGCAAAACAGACGACGGGAGCTTTCGTGCCGCTGCGAACAGGA  
 TGTTTTGGTGTGCCGAAATGGAGTTCTTCAGCGCGAAACCGGATTTTGTGACGGGCTT  
 CGGCAAGGAGTTTTTGGCAATCCCTGTCGTAGGCGTAACGGATGTCGGGAAATCAGCT  
 30 CTTTGGCAAGCTCTAGGATTAGTTTCCGTCATATTTGTCACTTTTGAATTAGAACG  
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 GGTATTTTACCCATCAGTCTCTGAATCAATTTGCCGTGGCAGGCTTCGTAAGCGCGCAGC  
 AATCTTCCACCGTTTCGCTATCCATTTCGGGACATCTGCTGCCCAAAATCGTCGCGT  
 35 TCGATGGTTTGCCGATGAGAAAGTCTTCGTCGTTTTGCAACTTCGCTCGGACTCG  
 TTTTGTTCGCGACCGTGGCGTAGTCGCTATTCGCTTTCGCGACCGTGCCACATATCG  
 AAGAAGCGCTATTTTCGGTATCAAAATATCCAAACAGCGGTTGTAATCAGGCGAGCGCG  
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 TTGAGCGATATCGACAAATCGCTCGGAATTTTATATTTGTCGATTTGAAGTAGGCA  
 40 AAGAAATGGGCGCAACTGCCACCGTTACACAGCGTTTCGATGTGCGGCGCGGCAAC  
 GCGCAGGCTTCTTCGGCGGCAACCTGCTGAATCAGCTGCTGCCATATCTGCCAGTTCTT  
 TTTATAGTCAGCCTTGATTGCGGAATGCTTCAGCGCTGATTTTTTAAGCTGGGAAAT  
 TGGAAACAGGATATTGAACAAATCGCAACTTTTCGGGGTCAGCATAATATATCTTGA  
 45 GACGATGTTTCAGACGCGCATTTTTCGCGCGCGCGCGCCATAATTTCCGCGATTTCCG  
 GTCAGTTTTCTTTTGGGATAAAGGTGTTGCCCATATCAACAGCGGCTCTTCAATCGCC  
 AAATGAACATCATATCCGCGCAAAACGTTTGAACGCTTCCTCATCGGGGACATAAGCG  
 TTGCTCTGCTTCGAGTTTGGCAAAATTCGGCGGAAACAGCGCGCCAGTTGTCGTGACGCGG  
 ATATGTTGGGCGAAAGCTCGTCCACGCTTCTTGGGCTTGGCGGCATATTCAGCAGCAGC  
 AGCGGGAAGAGTTTCTTCTCTGCTTCATGGTCAGCGCGCGCGGCAACGTTGAATATC  
 50 TGGCGGATTTGGCGGATGGTTTGCAAAACAATCTGATGTCAGCGCTTTTCGGCGATATAG  
 TCCGACGACATGGCGACTTTCGCGCAAAACGCGCACTTTGCCGTGGCAGGCATACAGC  
 ATTTCAATCGGTTCCGCAAGGTAACGCTTTTGGTTTCAACGGAATTCATGTTTCGTTT  
 TCAACGGGCACTTTCAAGCAGTCATTTATAATAAAACAGCCTGCACAAAGCAGGCTGT  
 CGCTCTTTTGAGACTTTAAGCGGATTAATCGACCAAGACTCACTTTGCCGTTTCATCAAGG  
 55 ACCGTGACCTGGGAAGGTACAAGCGAATTTATATTCGCGCTCGGCCAATTTAGCAGGATC  
 CAGAGTCAGGGAAGCTTCTTCGCGCGCGCGATCAGTTTGGTATGGGCAACCAAGCGGTGC  
 ATCATCAGGTTTIGACATAGTCGGTATCGGACAGCTACGCCGTCTTTAAATACGCGCTC  
 CATGCTTCAGCTTTGGCAATCACGAGATTGTGACCCATGCTGGCTTTGGGTTGCGTACC

GGTATGTTTCAGAGTGATGGTGAACCTCTTTACATGCTTTGCTGACTTGGATGCTTTGGT  
 GTTGAACATGCATATTGTCGTGGATTTCGACAGTTGCCGCACAGTTGCCGCGCAGCAGGGGC  
 TTCGCGAGCATCTCGAGGAGCAGCTTCGGCGGCAGGCGCTTCGGAACGCGGTGCTTCAGC  
 AGCAGGAGTTGCTCTCGCAGCAGGCGCGGCGAGGTTCTTGAGAGCAGGCAGCCAAACCGAT  
 AACGCGCGCAGG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 86>:

**gum\_86**

CCGCAATATTTCGTGAAACGTCGGTCGGCATCGATGATGTGAAAAACCCCGCTTTTGCT  
 10 GGGTTTGTTTTTTTGGGTGGTTTTCTGGCAOCCGTATCGTCAGAATCGGGTGCAGGTTTC  
 GGATTTCGGATTTCAGATTTCAGATTTCAGATTTCAGATTTCAGGTTTGTGTCCCATTCGC  
 CGCGCTTTATAGTGGATTAAACAAAAATCAGGACAAGGCGACGAAGCCGACAGACAGTACAA  
 ATAGTACGGAACCGATTCACTTGGTGCTTCAGCACCTTAGAGAAATCGTTCTCTTTGAGCT  
 15 AAGGTAGGCAACGCTGTACTGGTTTAAATTTAATCCACTATATCGTTGAAACTCTGAT  
 TTTAAGCGGTTAGGATGTGGGTTTGCCCATAGAAAGGAATCCTTTCTGTATCAAGCCCT  
 GAAAGGGATAAATTCATACAAATTCACGCCCTTCCCGCTCATTTGGGAATGGATGGAATCG  
 TGCCAGATGTGTGCGGCACGTGATGCGCGGATATGGTTTTATCATCAGCCCTTTTCGGTTG  
 AAACCCCGTCAGTTGACGCGATTGAGCCTAATCGGTGGCGGAAGTTGCCGCTTTGCATTC  
 GGGCGGCGTGCAGTGCCTGCTTTGATATGCCGTTTGTGTGTGAACAGGGTGGTCGG  
 20 TGCATACGGGTACGGTATGGCCAAAGCTAAAGTGAATACGCTGAACACATGAATGAGC  
 CGCTTATTGTGTTGTACGGCTTTGTCTGCTTTGCTATGATTAAATTCGATTCGCCCCC  
 GGATATTTTGGGATATGAAGAATTTGACCTTCATCAACCGGTATTTGCAACACGGCAGCG  
 ATAATGATGTCGTATTGGGCATAGGCGACGATGCGGCGATTGTCGCCCCGCGTGAAGGCT  
 25 TCGATTTGTGTTTCAGTGCAGGATATGCTTTTGAAGGACAGGCATTTTTCGAGATGTCA  
 AACCTGAAGACTTGGCTTGGAAAGTTTGGCCGTCAATATTCAGATATGGCGGCGATGG  
 GTGCGATACCCGCTTGGGTGTGCTGAGCGCGGCTTTGCCCGAATTTGGATGAGGTATGGC  
 TGAACCGGTTTTGCGGCAGCTTTTCGGTTTGGCAAAAAAGTTTGGCGTAACGTTAATCG  
 GCGCGATACGACCAAGGCGCATATGCGGTTCATATGAACCATATCGGCGAATTCGCCGA  
 30 AGGCTAGGCGGTTGCGGCGTGATGCGGCGGTTGCGGCGGACGATATTTGGGTGTCGGGCG  
 GTATCGGTATGGCGCGGCGGCTTTGAACTGCGCTCGAAACGGGTGTGTTGCCAGATG  
 AAGTGTTTTGCCGAATGCGAACAAAGCTGCTCCATCTGAACCAAGSGTTGGGCTGGGCG  
 TTGCGCTGTTGCCGTTTGCCAGGCGCGCGCAGGATGTTTCAGACGGCTCGCGCAAGATT  
 TGGGGCATATCCTGACCGCTTTCGGCAAGGTCGCGAAATTTGGGCGGATTCGCTGCCGT  
 35 CTTTATCCGTATTGAAGATATTTTCCCGCAGCGCAATGGCTGCTTATACTTTGCGCGG  
 GCGGCGAGCATACGAGCTGTGTTTACCGCGCCGGAAGTTGCCGACGCCGCTATTTG  
 ATCGCGCGGAACGCTGCGGCGTGCCGTTAAGCGCATCGGCAAAATCAACGGAGGATGCC  
 GTCTGAGGTTTTAGATGC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 87>:

**gum\_87**

CCTAGTTTCTACAGCGGCTGTATGTTGGCAATTTCAGCAGCTTCTTCTGTATCTGCTGTA  
 CAAATTTAATGAGGGAATAAAATGACCAACACGCTGAAATTAAGCGCATTAATTCGTTGTA  
 TTGCTCGCTTCGCGCACTGCTGTTCGGCGGCGAGCGCTCGTTCAGGGTTACACCGTAAGC  
 GGCCACTCGGAACGAATCGTACGCAACAACATAGCGAATGCTGGAAAAACGCCATCTTT  
 45 GATAAAGCAAGCCAAGGTCGCGTAGAATGCGGCGATGCGGTTGCTGCCCGGCAACCGGAG  
 CCGAAGCCGGAACCGCACCCGCGCTGCTGCTGTTGGAGCAGGCTCCGCAATATGTT  
 GATGAACCAATTTCCCTGTCTGCCAAAAACCTGTTTCGGTTTCGATAAGGATTCATTCGCG  
 GCGAAGCTCAAGCAACCTGAAGATATTGGCGCAACGCCTGAGTGAACCAATGCTCCAA  
 TCTGTCCGCGTGAAGGCCATACCGACTTTATGGTTCTGCACAAATACAACTCAGGCCCTG  
 50 TCAGAACGCGCGCATACGTAGTGGCAACAACTGCTCAGCAACGCGGTACCTGTTTCT

AGAAATTTCTGCTGTCGGCTTGGGCGAATCTCAAGCGCAATGACTCAAGTTTGTGAAGCC  
GAGTGTGCCAACTGGGTGCGAAAGTCTCTAAAGCCAAAAACGTGAGGCTCTGATTGCA  
TGATCGAACCTGACCGCGGTGTGGATGTGAAATCTCGCAGCATCGTAACCCGTCAGGTT  
GT

5

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 88>:

**gnm\_88**

GCCGATTTGGACGCGCTCGAGCATAATGTTGCCACAATTTTCCGGAATATCAGGAAAGCT  
CCCCACATC<sub>s</sub>TTTCTGCCATCGGCCATCAGGCGGCGAGAGCGTTTGAGCGGCGAAACGACC  
10 GAGCATATGCAACACCTTGCCATGAAGAGCGCGCGTTTCGACATCGTCTGTTGCCCTTCG  
TCGCCGAGCGGCACACGGTTTGGAGCAGGTTCAATTTCAAGTTGCCGCGCAACAAAGGCAAT  
CCGCCCGCTCTGCTGAATAAAGTTGCTTCGGCGCGGAATTGCGCGGTATCAGCCTTGCC  
TTACAGGTTGTGTCGACGCAATATACCAAGTTCCCAACCTGATTTTTGATGAGGTCGAT  
ACCGGTATTGGAGGGGAGTGGCTGAAATGGTCGGCAAGGCATTACGTGCGTTGGCGAGA  
15 AAACATCAGGTGCTTGCCGTACCCACCTTCCCAAGTCGCAATCCTCGCGGAGAAAACCAT  
TGCGCGGTGCGCAAGCAGCAGCGAGGAGAGCAACCGTCAGCGAAATCAGTATATTGGAT  
GAAATCCAAAGCATGGAAGAGGTTGCCCGTATGTTGGCGGAGAGTCATTACCGATACG  
ACCGGCAACATGCGCGAGAATTGCTGCAACTGCGTCGAAAAATAGTTTATTTAAAAAT  
CAATCAGTTAAAAATACTAAAAATAAAGTCTAAAAACAATAGACAGAATCAGATAAA  
20 TCCGATTATCAGCCTTTCTTAATCACTTGAACAAGTCATTGTCGTCACCCGTAGCTCA  
GTTGGATAGAGTATCTGGCTACGAACACAGAGGTCGGGCGTTTCAATCGCTCCGGGTGCG  
CCAGTAAGAAAAATCAATATGCGGCCATCGCTAGCGGTTAGGACATCGCCCTTTCACGG  
CGGTAAACCGGGTTCGATTCCCGTGGGCGTGCCAAATCAAAATGCCCTCCGATTATATCG  
GAGGCATTCTCATTTCTCATTTCTCATTTCTCATCTAGACCTTTGCAATACATAGGTT  
25 TTACTAAAAATTTATGCTCAATCTCATTTCAAAAATGCAAAATTTTCTGATTTTCCCTA  
CTTTTGCTCAATATTAGGAAGGTTTTAGGCAATGAAAAATTTTGGCGCATTTTATG  
CGTCAAAATTCGTTAACAGACTATTTTGCAAAAGGTCCTCGGATTAAACAAAAATCAGGACA  
AGGCGATGAAGCCGAGACAGTACAAATAGTACGGAACCGGATTCACTGGTGCTTCAGCA  
CCTTAGAGAAATCGTTCTCTTTGAGCTAAGGCGAGGCAACCGCGTACTGGTTTTGTTAAT  
30 CCACTATGTAGCTCCTCGAAGGGAATAAAAAATTAACATCCTTATATATTGAGTTCC  
TGAGAAGGGAAGATTAAACAAAAATTAACGCCCTTTACTTTCATACAAATCAACAGGGCTTT  
TCATTCTTCTTATCTAACAGGGGTACAGAAACCGAAACGGTCCGACGGTTAAGGAA  
GTCTTCGAATGTTAGCGAACATTTCATCTTGACAGCAAAAGGCAATTTGTTAGGCATTTCCT  
TACTCCTTATTTTGGGAAGAAAAACCTTATGGTGTTTTTCGATATTTTACCGTCAGGATGT  
35 GTATGTTTTATTTGAATATGATTTTCTGTGGTCGGGACCGCATGCGGCGAAAGACTTAAGGG  
GTTAGATCTTCTCTGACGATGGCGCGGATGATGGTCGGGTTGGGCTGTAGGCGCGTGG  
CGCAGGCGTTGTGAAAAGGGATGGGCGAAGCCTAGGATTGGGCTGCAATGGCGGCGGCG  
CAGATGGGGCGGTGGCGAGTCCGCGGTTCCGTCGCGGTGTTGACGTAGGCATTAGGC  
AGGTATGGGCTGGGTTGTCATGCGGTACTTTTGTCCAGCGCGAGTTTGGTGATGGTCT  
40 TGCCGCATGGCGGCAATGTGCGCGAGTGCCCGCATAGGGGAAGGTGTGCGGCGTCTCG  
CAGCGATATGGCGCGTGCCTTGGTGTTTTTGGGGTTTGGGTTGGCGGCAACAATGAT  
TCGGAACAGCGCGGGGTTAAGCTCTGCCAATGCTTGGCGGTTTGAAGGCTTCTTGGGCTCG  
TTCATCCCGTATGGCTGCTGTGGGAATAAAATCGCGCGTAGCAGTGCAGTCTCGTGC  
CAGCAGCGGCTGATGTAGCTTTCGCCTGAAACCGGCAACGCGAGTTGTTCCGAAACCGGG  
45 GTGACCGCTGTAGGCGCGTTTGTCCCGGTTATTGCTGAGAGGACGGGCGAGGCTTG  
GTTTCGGGTAGGTAGGGGCTGTTGCAACCGGTGACGTAGATGATGTGTGTCGGCGTAAAT  
GTGCGGTTTGGCGTGCTTGCATTCACCTTTTCCCGTGTGGGAAATGTGCGTCAAGGT  
GTGCTCTGTGTAGTCCAATGAGCGGATGTTGAGGAGGTCGCGACGAATGCGGGTGGG  
TTGAGCCATACCGCTGTTGCCAGTAGAGTCCGATGAAGGTTGTCGTATGGGACGAC  
50 AGTGGGATACCGCGATTTTTTCCGCTTCTGCAGATGTGATGTCGGGTAGAGTGGTTA  
TGGTGTTTTTGCAAAACCAATTCTGTATGCGCTGTGCTGTCGGTGGGCTGTAATTGAGG  
TGGATGATGCCGTTGGCGCCCCAGGTTTCGGATTGGGCGAGGATGTGTCGAGCAGCGGT  
TTGGTGTAGCCGTAGCGGCAAGCAAAAGTTTCGGTCTGTTCGGTGTGTCGGCGGAGATT

TTGGCGTAGAGCAGCCCTTGGCGGTTGCCGCTGGCGGCTTGGCGGCTTTTCGGGCTTCC  
 AATACGGTAAACGGAATGCCGTGTGATGCTAAGCGGTGGCGGTTGCCGCGCCGATATG  
 CCGCGCCCGATAACGAGGATGTGTTCCGGTTTTTGGCGTTCGGATGTTTGTGGAAAGTGCA  
 AACCAAGGTTTGTTCGGGCTTGCTTTCGGTTTTCGGGATGGCTTCGGTTCGCCAGGAAATG  
 5 TGGTGGAAATGTTTCGTGCAGGTGGTGGTGCGTGAAGGGGGAACGACCGAAGCGGACA  
 TCGGGCAGGATGTGTCGATGAGGTGATGCTGCTCGAAGTGGAGGCAGTGCATTGCGCTGA  
 TCCAAACGGTGCTTCAGACGGCATTCCGGCTCCGAAGCATCTGTGCGGTTTGAAGATCG  
 GGAATCTGATTATCGGGGAGGCAGATAATCAGGTTGAGCGGGGTGCGTGTTCGGGATG  
 GCTTGGTCGAGTGTGCGGATGTCCGGGAATGCCGTCCCATACGAGATTGTCCATATCAATG  
 10 CCGTTTAAAGTGTGGGTTTGAATATCGGTATCGGGATAAAGCTGTTAAAAACACGCGCGCT  
 TTGAAGGCACGCCCTGCGCTGCCGATATTTGATGCCGAACCGAGGTGTTTTTGAATAA  
 TATTCCTGTTGAATATCGGTTTGTGAAAAACCGTACCGTGTGGTTTGAATATTTGGGA  
 CGAACCTAAAAATCTGCCGTGCCGAATTTTTACGCGCTATTTCGCCGAGTGGGAAGTGGC  
 CGGACACGGCGTGGGACAGGATGTTTTGCAGACCGCGAAGCGGATGTCCAAATTCGGGA  
 15 TTTGCAGCCTGTCCGACAGTACGCGCTGAAAAATCAGTTTTTCAGACGGGCACGACAGCG  
 TCTTTAGATTGGGCGTATCTGCACAGACTGGCATACGGATACGATGCGATGTGGCGAGGA  
 ATATTTGGACAAATTTGGCGGCGGCGGCGCGCTGCGGTTTTGAAGAGAATAAGACCGGTC  
 GGTGTTAATCTGCAGCGCAAGGTATCAGAGAGTGGTTAGAATATGGCGGCACAGAA  
 ACGCATTTTCGGATTCACTACGCTCAACGAAGATGAAAAAGCCGGCAAGTGGCGAAGTG  
 20 TTCACTCCGTGCCAAAACTACGACATATGAACGATGTGATGTCCGACAGGCTGAC  
 AGGTTGTGGAAGCATTTTCCCATCAACACGGCGCACTGAAAAAAGCGGATAAAGTGTG  
 GACATTCGGGGCGGTACGGCGATTGTGCGCGGTTGGGCGAAACGGGTGCGCAAGGAA  
 GCGGAGGTTTGGCTGACCGATATTAATTCCTATGCTGACCGTTCGGGCGCGACGCTGCT  
 TGAACGAAGGCATGATTTTGCCTGATCGCTTGCAGATGCGGAAAAACTGCCTTCCCG  
 25 GACAATATTTCAACTTGGTTCCGTGGCGTTCCGCTTCCGGAACATGACGCATAAAGAT  
 CCGCGCGTGAAGAGATGTACCGTGTTTTGAAGCCGGCGGACGTTGCTGGTGTGGAG  
 TTTTCCAAATCTACAAACCTTTGGAAGCGCGTATGATTTCTATTCTGTTCAAGCTGCTG  
 CCGGTATGGGCAAGCTGATTGCGAAGATGCGGAGAGTTACCAATCTTTCGCCGAATCC  
 ATCCGATGCAACCCGATCAGGAACCTTTGAACAGATGATGCTGGATGCGGGCTTCGAC  
 30 AGCGTGGATATCAATATGAGTGCGGGCATCGTCCGCTGCATAAGGCGGTGAAATTT  
 TAAACGGACTGGCTGTGCAGCCG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 89>:

**gum\_89**

35 GTAGAAATGCTAAGGAATCCTCAGATGCTTCTAACACTTCTTTGCGTGATTTGTCTAT  
 TGTGAAATCTGAATCTGGATTTTCAAGCGGCTTACCGTATTGACCGGGAACATGG  
 CGCGGGCAAGTCCATTACTTTGGATGCGATTGGTCTGCTGTTGGGCGATAAAGCCGATTA  
 CAGCCAGTCCGACAGCGCGCAAAAGAACGCGAGTTGTCGCGGTTGTTGATATTTCCCA  
 TTTACCTGTTTAAAGCAGAAATGTATGAACAGGGGCTTTTAAACGACGGAGAGAAGA  
 40 ACTCAGTATCCGCGCATATTATCGATGCCAAGGCAAAAGCCGAGCTTTATCAACAATCA  
 GGCCGCTACCTTGGCGCAACTCAAAGCCGTGGTAGCCAGCTTATCGACATCCACGGGCA  
 AAACGCCCATCATTCGCTTAATCAGGAAGCCGCCACGCGGAATTGTTGGACGCAATTGCG  
 GGGTAGCAGGGAGCAGGCGGAAACCGTCAGGACGCTTATCAAAATTTGGGCAATGCGGA  
 45 AAAAGCCCTCCAAGAGGCGCAGGAACACGCGCATGCCCTCATTCAGAGCGGAGCGCTT  
 GGAATGGCAGTTTAAAGCAATTGAATCAGTTGGACATTAACAAAGCGAGTGGGAAGCCTT  
 CAGCCAAAGCCACGACAGCCTTCCCATTCTGCCGAGCTGTTGCAAGCTGCCGAAGAAGT  
 CGGAGACAGAGATTGACGGCGCAACAGGCATCCAAAGCCATATCTATCAATGTCAAAAAT  
 ATTGGCCAAATCTGCAAAACATCGAGCCGCGCTTGGCGAGAGCTGAATATGTTGGCAAG  
 CATCGAAGCCGAATTTGGGCGAAATCAGTGCCCAATATGCGCATGTGGCAGGTGCGACGGA  
 50 CATCAATCCCAACGAACCTTGCCTGCAACAGAGCAGCGCATGGCGAGCTGATGGGATGGC  
 CGGGAATACCGGATCGAGCTGAAGAGTTGCTGCCAAGTTGGCAGAAATCG



The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 90>:

**GNMCD84F gnm\_90**

5 TCGACTCTAGAGGATCCCGGGCGTATTGGCGCGTGGCTTGCCACACCCAGCACCATTC  
GGCTTCAAGGCCAAAAATCAACACACGCTCAAAAATGCCGTCCGAACCCGTTTTCAGAC  
GGCATTTCAATTTGGCTAGTATAATGGCGCATTTTCCAACAAGGAACCTACCATTGCTGA  
CCTCGGAACAAGTAAAAGCCATGATTGAAGCGTGGCAAAATGCGAACATATCGAAGTAG  
AAGGCGACGGACACCATTTTTCGCGCTCATCGTTTCATCAGAATTTGAAGGCAAGGCAC  
10 GCCTCGCGCGCCACCGCCTGATTAAAGACGGACTCAAGCCCAACTGGAAAGTAAACGAAC  
TGACGCGACTTTCCATTTTCGGTTGCCGCCACTCCGCGCGGAATGGGCGACCAAAGCACAAT  
AATCGCCACACAAAAATGCCGTCTGAAACCATTTTCGTTTCAGA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 91>:

**GNMCD96F gnm\_91**

15 TTGCATGCGCTGACGCTCGACTCTAGAGGATCCCGCGGGAATTTTGGCGCGTGTTCGCG  
TCGGCGGTGCGCTTAAAGCTTCGAGGCGCTTTCGCGCGGCTTTCGAGCGGCTGCGTGT  
TCCGCCAGACCGTCCA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 92>:

**GNMCE20F gnm\_92**

20 CCGGGACCTTTTTTCTCCAGAAAGCCGGCAATGGGCGTGTTCGGCCGGGTGGGCATCAGC  
AGCTCGATCAAGGTGTGCGCCACACGAAGGGCGGACCCGACACCCGTAGTTCCACAG  
TCTTCGTGCGGGCCTTCGGGGCGCAGGCCGAGCGGCACATAAGGTGCGCGCCCTGATCC  
AGATCGGGGGTGGCGATGGCGACGTGGTCGAGGAGCATGGCCTCAGCTTATACCTGCTGA  
25 CCAGGACGCGGCACACAAAAATGAACCGGGAACAGGTTTTTCTGGACGCGCGGCCCGCT  
CGTTACACTCTGAAGTGTGACCCCTGACCGCCCTGCTGCCTGCTGCTCTCGTACCTCAT  
CGGCGCTATTTCGGCGCGCGCGTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 93>:

**gnm\_93**

30 CTTCGTCAACGAAAGCGCGCAAAACATCCGCCGCATCCTTGCCGAAGTGCCGATACACAT  
CATCCAAATTCACGCGGACGAAGACGACGCAATTCGCCGCCAGTTCACCGCCCTATAT  
CAAAGCCATTTCGTGTTTCAGACGGCATCAGACATCCGAAACGCCGCCACGCGCTTCCCCGA  
CGCTCAGGCACGTGCTGTCGATGCCTACCATCCTTCGGAATACGGCGGCACCGGAAACCG  
35 CTTTCGACTGGACGCTGCTGGCGGAATATTCGGGCAAAACCGTGGGTGCTTCCCGCGGGGT  
GACCCCTGAAACGCTCGGCGAAGCCGTCGCCATCACCAGGAGCGGAATCGGTGATGATC  
CGGCGGTGTGGAAGCGCTTAAAGGCAAAAAGATGCCGCAAAAGTCGCGCGCTTTATGCG  
AACCAGCAACCGCTATCCCGTTAAAGCAACAAAAATTTGCCGCGGAATGACTTTATAGTG  
GATTAAACAAAAACAGTACGGCGTTGCTTCGCTTAGCTCAAAGAGAAGCATTCCTTAAG  
40 GTGCTGAAGCACCAGTGAATCGGTTCCGTACTATTTGACTGTCTGCGGCTTCGTGCGCC  
TTGTCCTGATTTTGTGTTAATCCACTATAATCTAAAAAATTTATGCTATTAAATCAGTAAT  
TTCTGATTGAATTTTGAAACTTAATCCCGTCATTCGCCGCAAGCGGGAATCCGGCTCGT  
TCGGTTTCGCTTGTTTTAAGTTTCGGGTAACTTCCACTTCGTCAATCCCGCGCAGCGCGG

AATCCGGTTCATTGAATTCAGCTATTAGATAAATTTTGAACTCTAATCGCGTCATT  
 CCACGAGAAAGTGGGAATCCAGGACGCAAAATCTCAAGAAACCGTTTACCTGATAGATT  
 CGCGACTGACAGACCTAGATTCCCGCTCGCGGGGAATGACGAATCCATCCATACGGGAAA  
 5 CTGCATCCCGTCATTCCACGAAAGTGGGAATCCGGTTCGTTTCGGTTTCGGTTGTTTA  
 AGTTTCGGGTAACTTCCACTTCGTCATTCCACGAAAGTGGGAATCCAGTTTTCGTAGTT  
 TCAGTCATTTCGCGATAAATGTCCTAGCATTAATGTCAGATTCCCGCTACGCGGGAA  
 TGAACGATTAGTTAGTTGGGGGCAATTTATGGAAAAGCAGAAAACCAAAACAGCAACCT  
 GAAATTCGTCATTCCCGCGAGCGGGGAATCCAATGCGTTAGATTTCAGCTATTAGAAAT  
 10 AAAATTTGAAACTCTAATCGCGTCATTCCACGAGAAAGTGGGAATCTAGAAATTTAATGTT  
 GCGGCATAGCCAAAAAACCGAAACCGAACGGACTAGATTCCCGCTCGCGGGGAATGA  
 CGGCTGCAGATGCCCGACGGTCTTTATAGTGGATTGAGACCTTTGCAATAACATAGGTTA  
 CTAAATTTTATGCTCAATCTCAATTTTCAAAATGCAAAACTTTTCTGATTTTCTCACTT  
 TTTGCTCAATATTAGGAAGTTTATAGCAATGAAAAATTTTGGCGCATTTTATGCGT  
 CAAATTCGTTAACAGACTATTTTTCGAAGGCTCGGATTACAAAAATCAGGACAAGG  
 15 CGACGAAGCCGACAGACGTACAAATAGTACGGAACCGATTCACTTGGTCTTCAGCACCT  
 TAGAGAATCGTTCTCTTTGAGCTAAGCGAGGCAACCGCTACTGGTTTTTGGTTAATCCA  
 CTATAATATGCACAGATAATATCAACCCGTTTTTAAACAAGATATCCCGGCATTTGCGT  
 AAGTTTCAGCAAGAAAACTACAAACCCAGTCGCGCAGGAAGCGGATGTCGTCGCGCCAA  
 CCGGATTTGACTTTGACCCAGCTTCAAAAATCTTTGGTATCAACAGATTTTTCGATA  
 20 TCCAACCGCGCTTCGGTGGAAATTTCTTCAACGTTTCCGCGCTTACCGATTAAATAT  
 GCGTTTCGGCTTTCCTATCGACCAAAACGGCGATATAGATGCGGTTCAACCGCTCTCC  
 TCTTCAACCTGCTCCACTCGACGTTCTACGCATAAGGCAATTCCTCGCCCAAGTAGCGG  
 AACAAATTTTCACGCAGATTTTCGCGCGCTGG

- 25 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 94>:

#### gum\_94

- TTTTCAGCTTGGTCTTAACCGCCCTGCTTGAGTTGGGAAAGGCTTTCGACAAACACGA  
 TGCCCATCAGGTGGTCCAACTCGTGTGCACGCAAAATCGCCAAACAGCGCTCCGCGCTCCA  
 30 GCGGTAACTTTTCGCTTTTTCGTTCAAGGCTCGACGGTTGCATAATCTACATTTGCAC  
 GTAAAGATTGCAAGTGGCAGCGGACCTTCAGGATACCATTCGCTACGGGCAATATCCGCAC  
 CATTCAGACGGCTGAAGTCAATACTTAATGCCCTTAGCACCAAGCGCATTTGCATTTT  
 GCAITGCTCGTTTCATAGCAGCAGCGAATTGAACGCGCTTTCCAACTGCTGGGCAAGATAC  
 CGTCAGCAATTAATTGAGCATCCAATCAGGACGGCGAATCTCTCAATATTTACATGAA  
 35 CAGGTACCCCATCAAGACTTGCAAGTCACGTTTCAAAACCTCGATATCTCACCTTTT  
 TACCGATAACCAACCCGCGAGCGGAGTGAATGTAATGCGTGCAGATTTTGCAGGCG  
 GTTCAATAACCACTCGACCAACCGAAGCATTTGCCCAATTTTGACGCAATAATTTGCGAA  
 CATCGATATCTGCTTCAAAACAGTAGAAAAGTCGGTGCTTTTAGCAACCATTTTGAAG  
 CCCAGTCTTTAGTTACCGCCAGGCGAAAGCGCTGATGGGTTAATCTTTTGTCCCATAGCTT  
 40 TTCCTTAGTTACCCACTGTCACTTATGATAGCAAGTTTGTTTTTCGATGCGGTACCGC  
 GACCTTTGGCGCGAGCTTGAAAACGTTTCAAGCTTGGGCTTTGTCAACAAAGATAGTTA  
 CCACCTTTCAGTTCATCAATGTCGCGACCGTTATTGTGCTCGGCATTAGCAATAGCTGACT  
 CCAATACTTTTTTAATCAGCTCGGCACCTTTTTTAGGACTGAAAGCCAAAAATTTCAAAG  
 45 CTTGGGCAACGCTCTTTACCACGAATCAAAATCAGTACCAAAACGAGCGCTTTGAGCAGAGA  
 TACGGCGATTTTATGTGTGCAATTAATCTCATGATTCACCTTATTTCTTTTATGCTCT  
 TTTATGCGCAAGTGGCTTTTAAAGGTACGGTCAATGAGAATTCGCTCAATTTATGACC  
 AACCATATTGTCGCTGATAAACACAGGCACATGGGTGCGGCGGTTGTGCACAGCAATGGT  
 CAGACAGATAAAATCAGGCAGAAATGTTAGAACGACGAGACGAGTTTTAACTCGGGCGTT  
 50 GTCGTTGCTTGGCGAGCAGCATCTACTTTTTTACGCAATGACAGCTTACATATGGGCG  
 TTTTTCATGAACGAGCCATACTAAATTAACCTTTATTAGATAACGGCGGCAAGCAAT  
 CATGTTATCCGTGCGTTTGTATTACGAGTCCGCTAGCCTTTAGCAGGAGTACCCCATGG  
 GCTGACCGGTTTCGCGGCTCGCCCTACGGCTTACCACCACTATGCGGGTATCGAC  
 AGGGTTATGACAAACACCACTACAGTCCGACGAATACCGCGCAACGATTGGCCACGGC  
 TTTACCGATTTTTTCAGGCTTTGCTCTGTTACCGACTTACCGATGTTGACAGCGCA

ATCTACGTTGATTTTACGGACTTCGCCAGAGCGCAGCGGACTTGAGCGTACGCGCCTTC  
 TTTAGCCAGCAATACCGCAGAAACACCGGCAGAACGTCGAATTTGCGCACCTTTACCTGG  
 TTTTCATTTTCGATACAGTGAATAGTTGTACCAACAGGAATATTGCGGATCGGCAGAGTGTT  
 ACCTACTTTGATCGCAGCTTCAGCACCGGAAACCAATACTGCACCGGCTTGAATACACAG  
 5 AGGAGCAATAATGTAGCGACGCTACCCATCTGCATAGCACAACAGTGCAGATAAATGCAGT  
 ACGGTAGGGTCATATTCGATACGCTCTACTTTTGCAGGGATACCGCTCTTTGTACGTTT  
 AAAATCTACGACCGCGTAATGATGTTTATGACCACACCTTTATGACGGTAGTAAATATG  
 ACCATTTGTTGTTACGACCGGCAGTAGAATTTTTCTTTCCAGCAGAGGTGCATAAGGTGC  
 ACCTTTGTACAAACCTTCTGTTACACGCGAACCATGCCGCGACGGCCTCGAGAGGTTCG  
 10 CTTTCATTTTAAAGATTGCCATTTTGTATTTCCTTATCTCGAGCTGCAGCAGCGGCTTCC  
 AAAATCAACTCTTGACCGCGCAGCCAGCTTACATAAGCCTTTTAAACATCGCTGCGACGA  
 CCTAAAGTGCAGACCAAAACGTTTAACTTTACCTTTAATGGTAACAGTAGTAACGCTGCA  
 ACTTGAAAGCGGCAGACAGCTCAACAGCGCGCTTTAATTTTACGTTTGGTTCATTTGCC  
 AAAAATTTAAACGTCATTTGGTTACGTTTTCAGCCAAATACGTTGCTTTTTCAGAAAG  
 15 ATAGGTGCCAAAATCACTTTAGTCAAAAGCTTGTGATTCAATCCCATTCGCTCCTCTAATT  
 GTGCAACTGCATCITTAGTGATGATTACTTTTTTGTAAACGAGCAAGCTGAAGGATCAA  
 CTTGTTGAGCTTCCAAAACCAACAGCTTTGGCAAGTTGCGTGAGCCAGTAAACATTCI  
 CGTCGAGCTGTTTGGTTACAAACCAACTTGCTCCAGACCCAGATTTTCACTTTGTCGG  
 CAAAACTTTGGTTTAGGAGTTTCGGCAGTCAACGCTCAATCGCAACCAACGCTGCT  
 20 CAGCAGTCAATTGGGACAGAATAGTCGCCATACCGGCACGCTACATTTTGGGTTTACTTT  
 TTTAGCTGAAGTTTTCGTCGGGTTTGTTCGGGAACGCGCACCACTTTACGCCACAGCG  
 GAGAAGAAGTCATACCGGAACGGGCACGCGCGGTACCTTTTTCAGCCCATGGTTTTCG  
 TTGAGTGTTTTACTTCGGGCACGGGTTTTCGAGCGCGGTTACGGAGCGGGCGTTTGCCA  
 AGTAGGCAATTACAGCTGATGAACCAACGCTTCATTGTATTTCGGGGCAGCAACAGCAT  
 25 CAGAAACAGACAGACTGCCTGAAACTTGTCTTTAGCGTCAATTACTTTTCAATTCATTA  
 CGCACTACTTTTCAGCTGGGACGAATACAACATCGCTGTTGACCGCACCCGGAACAGC  
 ACCCTTAACCAACAGCAGTTGGCGTTCGCTCAACACGGAACCTTCAATTTTGAAC  
 AGTTGCTTTGCTGTCGCGATTGTCGCGGCATGCGTTTACCGGGGAACACGCGACCCGG  
 GCTTCGCGCCATACCGATAGAGCTGGGAACAGCGTGAGAACGGGAGTTACCGTGGGAAGT  
 30 ACCTTTGGGCACCGAAGTTATGACGTTTAACTGTCGCGGAGAAACCTTTACCTTTAGAGGT  
 ACCGGTTACATCGACCAAGTTGACCGCACTTCAACATAGAAACGGTGATTTCGTCAACAC  
 TTTCAATTACGCGCAGTTTTCCTTCAGTCAAAAGCAAACCTCAATCAACCGCAGCGCTTC  
 AACACCTGCTTTTCAAAAGTGCCCGGCTTCGGCTTTGTGACACGATTGGCTTTTTCGTG  
 ACCAAAGTCAACTTGAACGGCAGTATAGCCGTCAGTATCTTGGATTACTTGTGTAAAC  
 35 GCGGTTGGCAGACATATCCAAACGGTTACCGGAACAGAAACACCTGTTGCTGCAACAC  
 CGGGGTCAATACCAACT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 95>:

#### gnm\_95

40 GGTTTAACTGCAAAACATCGTCCGCAATTCGCGGATTTGCCAAACGGCGAGATAGCC  
 GTAAGTATCGGCAGCCCTGCCGCGCAGTCATCAGGCATAGTGCAGATACGGCCAGTAT  
 CTTTTCATCATGATAAATCCCGCGGTTTCGTCCTAATTTCTGTGATTATAAACAAAA  
 AACAGGATAAGTCCCGCTTATCGGCTTATCCCTCCCGCAGATTGCACCGCGGGTATG  
 45 GCAACCGGATTCAGCAGCGCAATTCGCGATACCGCGCGCTTAGCGGCAAGCCGTTGTTT  
 TCAGACGGCATTCGCGCCAACCTTTGCGGCGGGCGAAAAACCTGTCTATAAATTTATCC  
 CGTTTCAAAATCAGCATACGTCGGGAAATGCAAAAAATATCTTCAATTTGTGAAGCTC  
 GCAAACTCCCGGAAAAATAGGGAACCGCGCCCGGCTTTGAACGGCGCGCCGATATTCCG  
 ATGCCCTCCCGCGATACCTTCGGGAAGCCAGAAATGCCCGGCAACCAATCCATCCG  
 GCAAAATTCGAAACCAACACACCGCGCGGCGAGAGTCAACCGCCCGCAAGACCTC  
 50 CGCATCAGAAAAACAAACCGCTCCGAGGGCTTCATCTTAAGGGCGATTGTTTCGATA  
 ATGGTTTGGGTATAATCCCTTATCGATTCTCCAGTCGCGTGCAGACACTTCAGCTATGGA  
 AACCCCGACCAACACCCCGCAACGCTCCCTGCGTCAAAACAGTATCTACGCTGCTGCCAA  
 TTCCTTTACTATCGCGCGCTGTTTTCGCGCTTTACGCAATCAACCAATCCATGCACGG

ACGTTATGAAACCGCGGCATCGCGGTATTTCATCTCTATGTTGCTGGACGGTATGGACGG  
 GCGCGTGGCGCGGTGACCAACAGCCAAAGCGCGTTCGGGGAGCAGCTCGACAGCCTTGC  
 CGAATATGGTCAGCTTCGGCGTTGCTCCCGCTCTGATTGCCATCAAAATGGCAGCTTTGGCA  
 GTTCGGGCAAAATCGGTTATTCGTCGCGCTTCATCTACTGCGCCTGCGCGCCCTGCGCCCT  
 5 GCGCCGTGTTCAACACACTCATCGGCAAGGTGGACAAACGCTGCTGTTATCGGCGTGCCAG  
 TCGACTGCCCGCGCGTATTGTGCGGCTGATTTGGGTCAACCACAGCGTCGAAAAATTT  
 CCCCGCCGTCACCTGGTGGGCATTTGGGCATCACACTGTTGCCCGGCTGTCGATGATTGT  
 CCAAAATCCCTTTTGGACTTTTAAAGAARTCAACATCCGACAGCAAGTCCCTCTTGTGG  
 AATGCTGCTTGGCGCTTACTGCTGCTTCTGGTCACTTGGGAACCGTCTGCTGCTCTCTT  
 10 CCTGTTCTTTCGGGATACAGCCTGTGCGGCTACATTATGGCGGCACGCCGATTTTGGAA  
 AAAGTACAGAAAGGCGGATTAAATGTGGCATTTGGACATTATCTTAATCCTGCTTGCCGT  
 AGGCAGTGGCGCAGGTTTTATTGCCGGCTGTTCGGCGTAGGCGGCGGCACGCTGATTGT  
 CCTGTGCTTTTATGGGTGCTTGATTTGAGGGTTTGGCACAACATCCTTACGCGCAACA  
 CCTCGCGCTCGGCACATCCTTCGCGCTCATGGTCTTCCGCGCTTTTCCAGTATGCTGGG  
 15 GCAGCACAATAACAGGCGTTCGACTGGAAACCGTATTACGATGATCCGGGTATGAT  
 ATTCCGCGTATTACGCGGCGCACTCTCCGCAAAATATATCCCGCGGTTGCGGCTTCAAAT  
 TTTCTTCACTCTGTTTTTAAACGCGCTGCGATTCAAAACACTGCATACCGACCCCTCAGAC  
 GGCATCCGCGCGCTGCGCGGACTGCCCGGACTGACTGCGGTTTCCACACTGTTTCGGCAC  
 AATGTCTGAGCTGGTTCGGCATAGCGCGCGGTTCACTTTCGCTCCCTTCTTAATCCACTG  
 20 CGGCTTCCCGCCCATTAAGCCATCGGCACATCATCCGGCTTGGCTGGCCGATTCGACT  
 CTCGCGGCGCAATATCGTATCTGCTCAACGGCTGAATATTGCGAGATTGCCGAGGGTTC  
 ACTGGGCTTCTTTTACTGCGCGCGCTGCGGCTCTCAGCGCGGCAACCATGCTTTGCG  
 CCCGCTCGGTGTCAAACCGCCCAAACTTTCTTCTGCCAACTCAAAAAATCTTCGGC  
 ATTATGTGCTTTTGATTGCCGGAAAAATGCTGTACAACCTGCTTTAAAAACACAGAAAA  
 25 AACCTTTTACGTTTGCACAAGCAATTAACTCAGGACAAAGCTGCCAGCTCTCTGTTCT  
 GACAAAAGGACAGACAACCTGACCGAGACCTTTGCAGAAATACGAAAAACGACAGATAC  
 CGTCTGAACCCACATTCCGACAATCGGCAGGGTTTCAGACGGCATCTGATAATTTTC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 96>:

30 **gnm\_96**

CCTTATTGTGGGAAGTATCGGCGAAGAGGAATTTACCGCGCAAGCCATCGCCGAAGRAAT  
 ATTACGGCCATGCGCGCAGCAAAACCGAGCTGGCGGCACTTTGATTGCGCTTTACGCGG  
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 TAAACACAGCACTTGCCGCCATCGAAGCGCAAAACAGCAAGACGCGCAATCGAGCTT  
 35 GGGCAGAAGCCTAAGCGTGGACTCCGCCACCACTCAAAATCAGCTCTGTAAACCGGTC  
 TGAGTCTTCTTTCCCGCTACTCAATAATTTATCCGCGCGCTCTTACCACCAATTCAT  
 TTTACAAATTTGAAAAATCGTGTGCGCTTGTAAAGTTGCGGCAAAATCAAGAGCTTCCTGA  
 TAAATATTTAATGCGCTTTATGAAATCTTGTTCTAACTGATTTTATCCATCATCTCT  
 40 CTCTCCAAATTTTACAGCGGATTTATCTTACCAGAAATTTCTTTCTCATCCGCTCCCGT  
 CTGATCACCTACCGAATCAGGTGCTCTGAAACAGCTCTGAATCGCTTTTACAGACGACCT  
 AGCGCTTTTTCATACCTCTGTAATAATACGACTGCTCGATACCTTTAAAGATGATTCTCA  
 CGGTTGTCCACATCGTCAGTCAGGTGTCCTTTAAACAGAAAGCGAGTTCTAAATGTTTG  
 ACGGGGCTGCGTCCATCGCCTGCAAAATACAGGGTTTTACTTACATTTTGCCAGTTCAGG  
 45 ACTTTTCTCAGGTTTTTTTTTCAGCACCAATTCAGCCAGATGCGGGTACTTCTGCGATTA  
 CCGTCAAAAAACGCGATGGGCAATGTTTCAATTTCAACATTTTGGCGATGATTTCTCAAAA  
 GTCCGCTCGGCGATCTGCTGATTTTAAACCAAGCCTCTTTTAAATACATGGCGTTGGCA  
 AAACGAAAACCGCTTTGGAATGTTGTCTTCCCTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 97>:

## gnm\_97

CTTGGTGTGTGATACCATTCGATTCCATTTCGATGATAATTCATTTCGATTCTATGCGATGA  
 TTCATTCTCTTTCCATTAGAACGCGACGCGGCAAGCGGATATTTTGGTATTCCTGCGG  
 GCGAGCGCGAAATCCGCGAAACTCGCGAAGCCCTGCGCAAAATCCACGCTGCGCGCGCAAC  
 5 CAGCAAAATCTGCGCCCTGTTCCGACGCGCTGCGCACGCCAGCAGCAAAAATCTTCCAC  
 CCGCTGCGCGCGAAACGCGCGATCGTATGGCAACCAACGCTGCGCGAAACCTGCTTTACC  
 GTGCGCGGCATCAAAATCGCTCATCGACACCGGCCTCGCGCGTGTAAACGCTATTCCGCA  
 CGGCGCAAGTGGAGCAGCTTCATATCGAAAAATCTCCCAAGCGCGCGCGCGCAACGA  
 TCCGCGCGCTGCGGACGCGCTCTCCGAGCGGTGTGATCCGACTGTTTTTCAGAAGAAGAT  
 10 TTTAACAGCGCGCCCGCAATTACCGACCCCGAAATCGTCCGCGACCAACCTCGCGCGCGCT  
 ATCCTGCGCATGGCAGCATTGAAACTCGCGCATGTGGCGGCATTCCCGTTTTAGAAATG  
 CCGATTACCGGTATATCAATGACGGTTTTTCAGGTGTGTTGGAGTTGGGGCGGTGGAG  
 GCCGTCTGAAAACAGGCAGACATAAAAGAAAAATCCGCGTAGAGTGATGTAAATCTACCTT  
 TGCCTTAATAAGTAGAAAAATGGTGGGTTTACGTCCCGCCCTCGCGCTACTAAAAAATAT  
 15 AAGAGTAAACAACCTTTTTTGAAGAAAAATGTATGGACGAATTCAAATACCCAAAAAG  
 TGGAAATACAAACCAACTAGAAAAATGAAAGATTGTTTTATCGAAAGGTTCTACCACGA  
 TTATTGTTGGTGCTAATGGCACAGGAAAAACAAGATTAGCTGTTTATATTGAAGAACTAT  
 TAAAGAAAAAGCACACAGAATTTCCGCTCATAGAGCATTAAAAATTAACCCCTAATGTCA  
 ATAAAAATACCAAAAAAGAGTGCCAAACATATCTATCTTATGGTCAGAACTGGGATGGAA  
 20 TCGATGTATCAAAATAGAAAAAATATAGATGGGATAATAACTCATATCTCATTTACTCA  
 ACGATTTTGATTGGTTATTACAATATTTATTCGCTCAACAAAAATATATTGCGTAGGACA  
 ATAATCAAAAAAGCTCAACCGTAATGAAAAAGTAAACCAATTCAAAAAACAAGCTAGATATT  
 TGCAAGAGCATGGGAACATATTACCACACAGAAAAATACATATTACAGCAGATGATA  
 TTTCAAGTCTCTGCTGTAGATAATGAGGAATTGTATTCTGCGCTCAAAATAGAGTAGGAG  
 25 AGCGAGCACTTTTCTATATTCTTGGCAAGTTTTGTGAGTAGATGACGGTCTGCTCTAA  
 TTTTTGTAGAGCTGAATTACATATTCTATAAATCAATTTTCAAACTATGGGATAAAAA  
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 CAACTCGAGTAGCTAAAAAATATGTTATCAGAAATATTATCCGACCCCTGCTTGGGATA  
 TTTCTGAAGTTCTGAAAGTAATTTTGATGAAGAAACAATAACGATGATTTTAGGTAGCC  
 30 GTAAGCCAATATTATTGTTGAGGGCAACAATAATAGTTTAGATATTGCTACTTACCGCT  
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 TATCATCGCTGAAAAAATTAAGTAATGAAATGCCATTACTAACTTAAAAATGTTCAAGTA  
 TTGTCGATTTAGATAGTAGGGATGAAAGAGAAATTGAACAATTAATAATTGGGTATTT  
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 35 TATTGAAACTAAATCAATATTTCAGATGAAGAATTACTCAATAAATTAATGGATTTAAAT  
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 40 ATTTGGATAAAATTACTACTATATATGATAATAAAGGACTCTTGGCTAAATTCAGCTTGTG  
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 CGGAAATTCGCGGATTTTGTAGTATTATTCGGTTTTTAAAAATGCCGATTCGCGGT  
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 50 GAACTATAAACTATTAAGAGGGAATATTGGGTTTTAAACTCAATCGGTAAATTTTTTA  
 TTGTAATTAATGATGAAAAATCTTTCCTTACGCTTGTCTGATTCTGCTCTTACT  
 TACCGCGCAGCAAAATGCGCTATCGCTTGTGATTTGGGATTGAAACCTTACCGCGGCAAA  
 AATTGCGGAAACGTTTGCCTGACATTTGTGATTGCTGCGCTGATCTGTTTGGCGGTTA  
 TAAGGTGACGCGTTTGTGATTGCGGGTTTTTTTGGCTTCAGCATTATTGCCAAACAATGT  
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 GTGGGCGGTGTTGGAAGTCATGTTGTTTTGACGCTTGCCAAGTTCCGCGGTGAAGACGA

TTTTCTGCGGATATACGTGTTTGCTTCCTAATGCTGATGATTTTCGTGCGTTTCGTTGGA  
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 TTTCAAGCTTCGGTATTTTGTGCGACGCGTGTGCGGTATCAGTTGTTGATTTAAGCAG  
 GATTCGCCCTTTAAGCAGCGTGTCCAAGCAAAATCGGGCAGGCGAGTTGTCAAAATAT  
 5 CGTCTCGATTATGGCGAAAGCGAAAGCGCGCGCATTTGAAGCTGTTTGGCTACGGACG  
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 10 GAACTTAATCGGTAAAGAAATGGATAGACCATCTGATTACGCCGACGCAACTTGGCTACGG  
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 TAAGGCGGTGCAACAGGCTGCCAACAGGCTTTTGCGCCCTTGGAGATTGCCTTCATCAT  
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 20 CGGCAAGGCGGAATATGTTTATCGCAATGAGTGGCGTAAAAACCAATTAAGAGCAAAATTA  
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 CGCGGATCAGGCGATGGATGCCGATCCAATCCGCGCAATGTTTCAGACGGCCTGCAAAAC  
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CGAACGCGGCGCTGTTGATATTTTCAGCAGGGCAAGGTTCTCGATGTCGGAACAACTTCCGCG  
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 10 ACTCTGTCAATCAATGAATAAACCACCAACGACCCACGATTGGGTTTATCTTTTATTC  
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 35 CGCGCTTCCACACCCACCTATCAACGTCCTGGTCTCGAAGCAGCTCTTTAGTGGGTTAA  
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 GATAGGACAACTGTCT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 98>:

#### gnm\_98

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 TTAATAATTCTGGCACCAATAGTACAATGACAAAGCAATCATGCCAATGATTAAT  
 CAGGATAGCTAGAATGAGTCAATAACGTCATGCTCCGCGCTCATCACACCGATATTGA  
 TGATAATGTCATTGGATGAAAAATCATGCTGGCTTTGATATGGATTCTTTATTTGAT  
 15 TTTTGCTCAGTAGATATAAGCACAGCCAGTTTGCATCAATGCCAAAAATGCCGTGCCAA  
 TCATCAGTTGATAATTTGGGACGCTGCTCAGCACCGGATAAAACGCTTAATCACTTCTATCA  
 CCCCAATTAACGCCAATATTATCTGCGTTATCCCGCCAAAATGCCACGCTTTTTTAT  
 ACGCCAGGCTCATACCAATGGCTGATAGCGCCAATATATAGACAAGCTGTCCGCGCAGCA  
 TATCTAGACTATCAGCAATCAGCCCCATAGAATTAGCAAAAAATCCACCGAACCTCTA  
 20 TGATAAAACACAAAGTTAATCATGAGCACTTGATATAATAATCTTTTTCTAAGTGCT  
 CATCAGGCTTGTAAACACTATCTTATCAACAATCACTTCGGTGGAAATGATATGACTAT  
 CAAAATTAAGCGGTTCAAGTACTTTGTAATCTTGATATCTGATGATAGACGG  
 TTAAGCACCGCCAGCAATATCAACTGTAATTCATAAATATCAGACACATCTTTAAAC  
 GCAATGCGAATGAGCTGTTCTTCGACGGCGAGTCCATTTTGGTAATGTAAAAATGGTCT  
 25 TTTTCTCTATTAGTTCTCTGTTTGTATCAGTTGGCTCAAATAAATCTGTGTTTATAT  
 TGTGCTTGGTAATTTTTGGATGGTTTGAGTAATTTGATTAGTTAAAAATTTACCTTTG  
 AAGTACCGCCAGCATAATAGTTTAGATATGTTTATAATCTCTGATGAAAAAACGTAAT  
 AAGTGCTTACTGGATAACAAAGTCCAAACCAATAGCAGGCAAAATAGGCAATCCACCCCC  
 CTGCTTCATTAAAGTATATATTAGAGAAACAAATGCAACTAAACAGAAAAAATTTGGGA  
 30 GATAAAGCCATTTCTATCCCTATTCAAGAACTAGCAAGATAGGTATTTTGTATTCTA  
 CAAAAAGAAAGGCATTTCCAAAGGAAACATGTGAGATAAAAACTTTTGTATTTTAA  
 CTATAGATAGAACCTTGCTTCTCAAGAGAAAGCCATTAATAATACCGATGACAGCTATTA  
 ATATATAGAGAAATAGTATAAGTATGAATAATCTTCAATAGACAAAAAGAAATGCGAG  
 35 ATAAATTCATACGATATATTGGAAATATAAAATATTACGGTCTAAACCTTGTTCAGTTG  
 CAATTTTTTAAATTTGCTTGCCATAAAAAAATCAAAGGCGTCCATTAACACTATCTTCTCA  
 CATTAGAATTTAAAGCTAAATAATACGACAAACAAATGTGAAGTACTATTTCAGGTTTTA  
 TTTAAATAATACTATTCTGAACATATTATTAGATACAGAAATTAACAAATTAGAAGTA  
 AACAGCTTTTAAATACTTTAATTTTATTGGAAAGCTATAAAAGGAACATAACTTTACA  
 CACTAGCTCACTCTTTTAAAGAGCAAAAGGATTGGAAAGTTCGCTCTGGAGATTAAGCA  
 40 CTGGTATTTCGGCCAATGGTAATAGAGTTTACCTCAAAATAGGGTGAACCTCTCTCATC  
 TGTCACTTAATAACAGCCACTTTTCAATGCCCTGTCAAATAAAGCGCGACGCGGAT  
 TTTTCACTCATCGTCATCAATAACCCATCACTTTTGGGGCCATTTCGATGCGCGCACCA  
 CGGTGAGATTCTTCAAACGGGGAAAAACCAAAATATCTCCATACCGATTTCGCGCGTTGA  
 45 TCGCGCTGGAAGCACCGTCCATCAATTTTCCAACCTCTGCAAAATCTGCGGTTATTCGTT  
 CGAGGTTATTGGGCGGTTTTTATCAAAATGGGGAAAAAGCTGCGATGCTTTTCTCTTTT  
 TGTCTGTAATAATTTTACCCTGCTCCGCGGTTGCAAAATTCAGGCGAGCCGATTATTGATCA  
 CGCGCGGCTGCACCAAGTTTGTGTTGATCCGCGCACTTTGCCAGCCAGCCGCTATCT  
 CGGGCGGCACTTCGCTTTTCAGACGGTCTTTCGCGGTGCAAAATGCCGCACAAATGTC  
 TCTCGCCCAATAACGAACCGTCTCTTTTTGCAAGGAGGGCACTTGTTCGACCCGATCA  
 50 TACCGATTGCGGTTGCTTCGTGCTGTTTGGCAGCAGGCTTCTTCAAGCTCCGCGCCAA  
 ACAGCTCCGCGAGCCATCCGCGCACGCAAGCAAGCGGCAATGGTCGTAATAATACAGTT  
 TCTCAAAATATTCTCGTCAACCTGTCGGTACCGACTACCTTAACACCCCGCGCGCGCC  
 GAAACAAAGTTTATCTTCCGCGCTATGCAACGTAATAATAAGCTGTACAATAAATCTG  
 55 TTTTATCGGAACGGAAGACCCCATCATGACCGCATCAGCCGATTAAGACACGCAAA  
 CGCGCACTCTGCAGAAATTCGCGAATGGTTCGACAGCTACTGCGCGCTCTGCGCGAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 99>:

**gnm\_99**

```

5  TCATACATATAATTAATATAGAGCCTCAAGCAGATCAATTCCAAATATATGCTGAGTTTG
   TAGCTATGTTAAGTTTCATGGATTTCCTAATCTAATCCTTATCTTTCGAGGTGATGATTG
   TCTTGGTCCAACTCAAATGTTCTCATTCTATGAAGGACAAACATATCTTACTTGGACCAA
10  ATAAGTTCTCTTAATCTTTAAACAAAATCAATTGGCGTTAGTAAATTAATTCATGCTCTAT
   ACATATTACTCTAGGCTTAAGCTTACTCAACTGACATGGGATCTCATATCACTGGTTT
   ACTTTAGTCAAGTGTAAATGGGAAGAATCTTGGCAATTGTGAAAGGGAAGTGGCAG
15  ACaAGAGAAAGTAAGAAACCGATAGGAGTTATTATTCCTTCATGATCAGAAGTGAGATTG
   AGAGAATCTCACAAAGACAATCATATCTTGTGTATAGTGACATGTTTCAAGAAATAGGGT
   TTTTAATTGTTGACACACACACGATCCAAATCCATCAAAACCCAGCGCTGATCTCTTTTTCGT
   GGCTGCGAAAAATACCGTCAATCAAGAGAAGAATAAGCATATCTCTCTGCTTATTCGCCA
20  CCATCTTTGGGCTATCTCACACCCACACCCCTTCATCTGAGCATGATTCTTGAACAAAATAA
   TATCTTTCGAGAGAAAAAGTAAAAGCTTGGTCCACATAAATGTAAAGATTCTAATCCGAT
   CATGCATAAAAAAGTTGCAATATCATATATAAAACATGTGGGATGTACCATATTCTTTA
   GCATCTGCAACAAAGAACAT

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 100>:

**gnm\_100**

```

20  CGACCCGAGTCTTCGAGTAGGACCCACCTCTGAATCTGTGACAGACGCGGTTTCGTTCT
   CTCCTCTCCCTTTTTTCTCTCTCTTTGCTTTTCCAAAAATAAAGTTGTCTTTTTTTATT
   TATAATAAAATGATTGTGTGTTTCACAGTGTGTTGTTGTTTGGGGTAAAAAGAAAAAT
25  CATAAGGATGCTTCAATATTTGTTTTGTTTGGTTGAGTGATTGCTGAAGCCAACTTAA
   AAGAGAGAGAAGAGAAGAGTGACTCTGTGTGTGTGTGCAAGAAAGTCTCTCTTTCACAC
   CTTTCTGTTTTCTCGAACCTCTCCTTTAAAGATGGTGGAGGAATCTTGGGTTTGACAATC
   ATTAACACTGACCCCTCTTTTAGCTCTACAAGCATCCAAGGAACCCCTCTTACTTTTCCC
30  TCTTCTTCATCCCTCTCTCTATATCTCCCAATTCCTCTCTTTTTTAACCTTGATC
   TCTTCTTTAAGAGACTCAGA

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 101>:

**gnm\_101**

```

35  TAGCTTGAGAAAAGACTCAAGTTTGTCGTCTCCACGCCCAATAAATCGCATAAAAAGAA
   TTATCTTGTGTATGACCTTCTTCCAAAACGGAACGCCATCCCTGCATGTAATATATAC
   ATGACACAATATTAATATCTTTTACTCTGTAGTTTGAATGTGGTATTTCGTTTCTTTT
   CTCTTTTAGTTTCAGAAGGCTTGAACCGCAACCCACTTCACGGCTCAATTAAGCTCTCTA
40  TCATACAGAAACCATATTGTAAACAGATGACTGGAAAAGAGTGAAACATGATAATGACA
   GCGAGACGTATCATTTACTCTAGAGGATTGTGAAAAGAAAAAATTACCTCTGAGAGGCA
   CTCCAAGAGCATTTTGCAGCATCTTGATGAAGTGAACAACCTCCAAACCGGTCAGCTAG
   AAAGAGAAGATGAATCAACTCGGTGCCAAAATTCACAGTGCTTCCATGTTCAACTCTCC
   ACTATACATGAATTCATCATAGCCTTGAATGCTTCTGGTGATACATCGGTAGGTAAT
   CGTTGATGAATGGCTTCACTCATCCCATTTGTAAACATCTGGATGTTATAGAGAATAA
   ATAGAAAAATTGAGAATCAATATATTCATGTACATCAGAAGTGGACACTAAAAGAGATT
   CTC

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 102>:

**gum\_102**

5 TTTGCATTACAGGAGTAGCGGTTGACAAATTCAGCAAATTCAGAAATATCCAGAGATTGGTG  
 TTCTCTTAAGTGTGTATTACTATCTGTTTATATCATTACTACAGCTCTCAGACCCAACTGT  
 GAAGTATGATGCTGTTGCTGCTCCTCTGCTCAAAATATTTGTTTTGCCTTCAGGTGCAACA  
 AAGATGAAATTAAGGTGTAAGCACAATGGGAAGCATATGCTGACAAACATCTCATAAAG  
 AGAACAAAGAGGAGCTTACACACCTCTTCTTCACTGACGTGTGTGACTGATTACCCCAAA  
 AGGTTCCAGAAACAAATAACAAGTCAAAATGAAAAAAATATAAGAAAAATAAGCTAT  
 10 TATCCCAACACCAAGAGGTTTTAGCTTCACCCCATTTATAACGGACCTCTGAATTTGAAA  
 TATCACTAAAAGGAAAAAGTCACTCAGCGGCTACTTTCCGCTCGATCCTCCCATCCA  
 TTGCGACATTTCGTAGAAATTCGGGTCTTAGAGTTTTCAAATTTGACACTGACACAAAGA  
 TTTCGAAATTAATAATTCGAGCCACCACGAACAATTCACCCAACGATTCCATAACTAG  
 GTTGGGATTCACATCAATTAGACACTGAGACTGAAATTTTGAATCCTAATCCTAAAT  
 15 TCCGATCAGATCTAGAAGAATCTAGGTAAAATTTCTACGAAATCCCTCAAAAACATACA  
 GATTCGAGAGAGGAGAAAGAGATATATTTAGAAAATTCGAGAAGCTTCGACAGTATCTGA  
 ATCGCGTCCCCAAAACGGAGCTCGGAGCATAGAAGCGATTACGAGAACTTGATAATTGGT  
 GCTACCGAATGATGAATCCGATGATCTTTGATCAAATTTGCAGCAGGGGAAATCAAAGAC  
 AACGACACGAACGGCTTTCAAATTCGAAAATTTCTTTGAAGCA

20

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 103>:

**GNMCG08F gum\_103**

CCCAGTTTGCTTTATTTTGTAAATCGCTTGTGCTTGTGTGCGACACCTCAACTTGAGAGT  
 AGTATGTTATTGAGATGACGCAAAATTTATACATCTTATGTTGTACCTGTTTACTACTTTC  
 25 ACCAGGCTGAAGAATTAAGAAAATGCCCTTTGGGAAAAAATGTACCAGCAAGGGTATAT  
 GTTGGGAATGCGGTATTGGCATCCATTCACTGAGGAAGCCATTGAACAGGTATGTTGAAT  
 ATGGTGTTTGGTAGTATCTTGATTAAAGGCTAAACACAAAGTTTCTTTTCGTATTTGTC  
 ATCTTCAAATATTTGCTTACATTTAAAGTAAACCACTACATTTTGTGTTTTTATCAACACA  
 GCATTTGCAAAATAATGATTGAAGTATGTTGAACACCTGGAGTTTGCACTTTGTGAGTC  
 30 TTA

30

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 104>:

**GNMCG09F gum\_104**

AGGTGCGTATCGGTTTCAGAACCTGGTATTTAAGTGGCAAGACCCCAAGCCCAATTGTAA  
 35 TGTTCAATATGTTGCTGAGCAGCTGGGATAAACATGTTGGATATAGAAACGTGAGTGT  
 GTTTCCTGTGACACATAATCATATCTTGCTGTTGGAAGCAAGTGGATTGCCGTGAAGTTAG  
 AGGAGATGAGTCTGGTGACGAGAAAGTTGTGGAGGAAGGACTGGTTATGATTATGAACA  
 ATGGGGACTTGGGAATTTCTTGGAGAGTTGGCAATTATCTGACACAGTCTTCCTTGTGG  
 TGAAGAGGAAAATGGATGTCCTGCTCACAGGTTATATTACAAGCATCAGGTAATTTTCC  
 40 TTTGAGATCATCTGATGGGATGTCATTCAACTTCGTGGAGTGTCTG

40

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 105>:

**GNMCG10TRB gnm<sub>105</sub>**

GAACGACCATTATCTGGAGAATTTTCATGCAGCTTAAACGTTGGCAGAGAAGCCAACTGCC  
 AACCCCATGGGGCGATTTCCTGATGGTGGGATTTGAAGAACTGGCAACCGGACACGATCA  
 TGTCCGCGTAGTCTATGGCGATATTTCCGGGCATACCCCGTACTTGC GCGCGTCCATT  
 5 CGAATGCTGACCGGTGACGCCCTGTCAGCTTGGCTGCGATTGTGGCTCCAGCTCGA  
 AGCGGCATTGACGAAATTGCCGAGGAAGCCGTGGTATTTGCTGTATCACCGTCAGGA  
 AGGTCGTAACTTGGTCTGCTGAATAAAATCCGCGCTTACGCACTGCGAGGATCAAGGTTA  
 CGATACCGTAGAGGCTAACCAACAGTTAGGCTTCGCCGCTGATGAGCGCGACTTCACTCT  
 10 TTCCGCTGATATGTTCAAACCTCCTTGGCGTCAATGAAGTCCGCTTGTTAACCAATAACCC  
 GAAAAAAGTCGAAATTTCTGACCGAAGCAGGATTAATATTGTTGAACGCGTACCATTGAT  
 TGTAGTCGTAAACCCCAATAACGAACATTATCTCGATACCAAAGCCGAGAAAAATGGGCCA  
 TTGTCTGAACAAATAACCCCTCTTGCAATTGTGAATTC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 106>:

**gnm<sub>106</sub>**

TCATATTCTCAATTTCTTGCTCCTCAATGACAACGATGGTAGGCTTTACACTAGGAGAG  
 GGACGAAGCAAGTCTGAGCTTCTTCCCAAGTGAGTCTCAGCTCCATAGATTCTTCACTA  
 TGCAAAAGAGTCTCTTATTTTTTGACCAATGGTTGAGTTCCTCTCTCTCTTTAACT  
 20 CGTGTAGGATCATCACCTATCTGCCCGTTAGTCTCACTGTTCAAATTTCTCAGGCATA  
 CCATTCAACTCTTTGCGTATTAGTGAATAACAAGGAAACCAATTTATGGAGGGTGGGTTT  
 TCTGTTACACGACGATGATGTGCTCCTCAGTTGATGTTTCGGTTGGTGAGCCACACACC  
 TATTTATAAATATTGTAACCGGATAAGAATGGAGCTAAGCAGAAAAATAAAACACGACACA  
 TTCTTCAGAAAAACAGTTTCATAGAAACCCCAACCTGCATGTCTCCAGCAATTAGTCGCTT  
 25 CCTGGAAACCCATGATTAGTTTTCCGCCAGGATCAACCCGACTGAAAGTTACTGTAGAGGT  
 GAAAAACACAGAAAAACCAATAGTTTGAAGAAATGGTTTCATGAAAAATTTGATGTTAAA  
 AGACATGTTATAGTCTTTGAAGCTTTAGCTAAGACATGAACATATATAAAGTACCTGTATCAC  
 CAGCCTGTAGCATCATGGACTGTATGTCATGAGTGCACCTTCTAAAGACATACATTCTAC  
 TATTTGTTATGGGCCAATATCTGAACTGGAACGTCCACTCCCTACCCCTCATCTTGGA  
 TTTTCAAGGAATGCTCGGATTGACTAATCGGAGGAAAAATATGCTT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 107>:

**GNMCG12F gnm<sub>107</sub>**

CCCACCTAAATTGAACATAATTATGTGTTTGCAAAAACTTAAATACCACATGCAAAAAGT  
 TTAGTTTTATTTTAACTTTTAAAGCAATTATGAGCTACTTCTCAACTGTCCATTTAAAAAT  
 35 GACATGTTATATGTTCTTTTGTGCTCATAGTTATGTTATAAATGTTTTTTTATAT  
 TATTATGAGATTGTTATTAAGCTCAAAGAGCTAATGCTATAGTTTTTTTTTTCTTTTT  
 TTGTCATCATTTTAAACGAGAAGTGTAGCCAAATGCTATAGTTAAATATTATATTAAATA  
 CTACACAAAAATCAAGGTTATTCAATTCAAAGAAAAACCAATGGACAATATATGCA  
 CATTTGCACCTGAGAAATGAAATACATCCATGTTTTCAAATTTACATTGACCCCGTTAT  
 40 AATATTAAATACATATAGGACCAATTTTGACGTAAGGTGAATCTCT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 108>:

**gnm<sub>108</sub>**

GTTGTCTGGCATTACAAATTAATGGTTTAGCTGTCAAATTCAAAAACATGATTTTATCC  
 45 ACAATGAATCTAGTAACAATCTACAACAACAAAAAGAATCTAGTACTAAAATTTGGGG

TCAAAATCTATTGTTAAAACTTAATCCTCTTATTTGAAACTTCATCTTATCTTAATCCTC  
 TTATTGCTCTTTTAGTTGAAACAACCTCTCCACTTTTGGAAATTTATAAAATAAATTTTGCA  
 AGCTTCACATGGAGTATAGTGTGATAACCATATAAGTCACATGCGGCTAGACTTGGAG  
 TCGACACATATGTTATGTGCAATGTATTGGTTGGGCTCTTAATTTATGAAACAAATGGG  
 5 CTTTGCAATAACAAGTTAAGTTTCTCGATCAAGCTAAGCAATATCTCAGCTCGTGTGTG  
 ATTTGGTTCTTTTCTTGGTCAATTCATCAAGCTATATTTCTTAGTCACGGTTCTGTAC  
 CGTTGCCTCTATCCGAATCCATGCAACCTCCCCAACCATATATAACAGATAAGAGATTG  
 CACAATGACAGCGAAATGTGCTAACTCGTCTGGCGTTTCTAAGAAGACGACATTATT  
 GTGTGAATTTGGAAGAAGCGTGATTAGGGAACCTTGACGTGGACTTTTGGGCTATTGACA  
 10 AATAATAACCAACTTTGGCCAACTGTCGTATTAAATTTGTGGTTCATTTGTTTCTA  
 GTTGATCTTTTCTAGCCTTTGTCCTCGGTTTACCGCTGTGAGGTCGGGACCGTTG  
 TTAATTATTGTACACCGCATTAATTACATAATAATATAAACTCGCAAAATAAAAAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 109>:

#### 15 gnm\_109

TGAACCGTAACTACAAAGTTCTAATTTAAAAACACAGTTTTCTTTTATATTTTAGA  
 AATTTTACGGACGGAGATGGCTGTGGAATGGGATGACATAATCTAATAATTTATTTT  
 ACAGTCTTCCAATAACATTAGGTGAATTTTCCCGAAATTTTCGACTTCGTGAAAT  
 TGGACAAAAAAGTCCATAAACCGTTAATTTCTGTTGTGATATAGATTGTGGGTCGTA  
 20 AATAATCTAGCAAAATCCAAACAACTTTTGTCTTCTGTGCTTTTCTCTCTTAGATT  
 TTTTGTGTGTCTAATTTTACATATGCATGCCCTACAGTAATTCCTATTATGCATC  
 TACAGAACCTCAATTTATCGTCTCAGTGATAATAATGCAGTAACGTGAAGAAACGGACGTA  
 TCAATTTCTTTTCCGTACAGATTGAAGTTGTCTTAGAGAAATCGGTACTTATATAATGA  
 GCATATCATTTTCTCAGCGTGAATCAGAATGAACCATTTATGATTTTACCACATATATA  
 25 TTAARAGAGTAGGTTAGGAGAAAAATGATCCTACGTGGTACGTATTAGCTAAGACCAAT  
 CAAAAATATGAAATTCCTCTAATTTATCATT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 110>:

#### gnm\_110

GGATGTACGATTAGAGAGAAGTAGGACCATGGAAGTTAGGGAAGTAGGAACATGTCATAG  
 ATAAGGCCACCCCAATATGTGGTCTGTCTCATCTTAGAACCTCGTGGTGTGTGGCTT  
 AGCTACGTCGTCAATCATCCATCAGATCCAGTTTCAGTTTGTCTTCCATCATGTTT  
 ATACACGTGTTCTATCGTCTTTAAAGATATCTCAGCTCTCTTACATTGCCTAGTTGCC  
 TAATAAATTTTCTGCCGTTGCGACTAGTTTATAAGACTAATTTGAGTTTGAATGTGAAGA  
 35 TTCACAAAATGGGTCTTCATAAAAAGTTAAAAACCTTACCAGTTTTCGTGATTTTCTTA  
 TTTTGATGAAGTTTCTGTGAATCGATGTGATAATATGTCATGTAGTCTTTTCTCCG  
 GCTGACATAGTAAACATGTGATTGATAAGAAAATTTTATAGTATCGTGATAAATTTGT  
 GAGGTGTTAACTTTTGTGTTAAATCTTAATGCAAAAACCTTCCAAACCTTAGATTCTTT  
 TTTGTAATTTGGTTTGCATCAAAACACAATATCCGAATGTAAAATATTGAATTAGCTAAA  
 40 CAGTAGATGTCCTAGATCATCAGTAGGCGATATACATATAAATTTCAATTAATTCAGAG  
 AGAATAATTAATTAATTTGTAAGGAGGTGCTAAGGCAAGTCTTAATACAAGTCTAAAT  
 TATTACAGTAAAAATTCATGTTAGGAATAGGTTGGACATAAGAGGATGGTGTATCA  
 ATCTATTAACAAAAGTACAAATACCTGTAGCTGTACTGCCGG

45 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 111>:

**GNMCG15F gnm\_111**

5 CCCTGCTCTCCGTTCCATGTTTCTGCACITTTTGTCCATCCCATTCGCCACATTGTCAC  
 CGGTGCTGGTAACTCCCTTCTCTGTGAATCATACGTTGCTAATAATTCTTCTACACTCCC  
 GAGCGGAACCTAACGACTGCCCAACCAGAAAAGAAAAGATTAGAAGTGAAGATAACAGAT  
 TCTTTTGTGGAGCTTTAACTAGATGTAAGATGAAAAGTGTGTTTACCTGTGCGAGCTTCA  
 AGGTTTGACAGCGCCATAGCACCAACGATGGAAGACTTCCACAACAGCATCTGCCAAG  
 TCAGATATAAACATAGGTTCTGTTCTAGAGCAGGTACTGCCGCCAGTTTGTGATACCA  
 GACTTCAAGGCCAAGCTCTTTATACCTAACATCTATCTCCCTCCAGAGTTCAATGTGCTCG  
 CATCAAAACTGTTAAAAAGAAAACAAACGTGAGTTTCAAATAACCAAGAGAGAGAAAT  
 10 TTGTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 112>:

**gnm\_112**

15 TTA AAAAGGSTAAGTGGATCCTGACCCGTATATGCTGAATGAACITTTGTCATTTTCTGT  
 TAAATTAATTTCGCTGATGCCATCTATGCTTTGATGATGACGAGTTAGAAAAACAGCAAC  
 CTAAGCAAGAAATCCAGTATTCAATCGTCTGTGAAGTCTTAACATCTTCTATCGATT  
 TGGGGATTATTAAATTGTCATTTCAAGACTGATTTTCTCCAAGCCCTCACTTATTTT  
 GTCTTGTTGACAGTTGAAGGAGGCTGCTAGTTCCTAACATCCGAGTTGATATCCCCAGG  
 20 AATCAACCGATGTATGAATTACATAGTCATGTATCTTAGGATTGTAAACATCTCCAGGT  
 TTATATTTCCAGACTTCTCAATTATTAAGCTTTTCACTCTAGTTCAGATTCCAACAT  
 CGGAGATCGAGTTCAAGGAGCTTCAGTACATAGTGATGGGGACAGCAATGGGGTGTG  
 CACTTTGTGGGTACATCTTATGGTAGTCATCAGTGGGTCAACCCCGTTCTCGCAAGGTT  
 AACCTCACTTTTATCTTACTTTCTTTATTCATATTGTTGGAATCCAATTACCATGACAA  
 25 GGAATTCGCTGGAGAAAAATTTCTTATTGAGTTCTTTATGTTTACAGAAAAACA  
 ACATTACATCGAGTAGTCCACATCCAGATTCACTGATCCAAAGGCTTTGGCTTCAAAG  
 CCTATGCGGTATGGTCCACCAAGTTCGCTCGGATTATAGCTAGAATTTGGCTTGAAC  
 TACAAAATTGACGAAGCATAAAATTAAATTGAAGTGAACCTTCTTCTCTTAGATACAGT  
 ATTTAACCATATGATTTTCAATTTTTTGGCACCAGGGTACTTCCTTTCAGGGCTAGGAT  
 30 GGAAGACGCCATATATCATCTCGTGGTGGTGGTACTTAGGCGAAGAACATCAGGTCTC  
 CTCCATAACTTCTCTTTTACATACTCTGTCTCTATAAAGACACAAAGCGTCTAATGTCT  
 CCATATGTAACCCATACTCGCAGAAATAAGAGAAAATGTATTTAGTAAACAACTTTA  
 CTTTAGTCTTGAAAAATATATAACCGGTGAGGATTCTGTTGTCAGCTTATGTGCAAC  
 TATTACACCTTCAGAC

35 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 113>:

**gnm\_113**

ACATTACCAATGGAAGCTAATGTTGGTTTTTAAAACTCGAACCATATTATCTAGAGT  
 CTTCTAGACTATTCTATCACTTAACAAACATGCGAGTTTGATTACGAGTTTTTCTCGTTAC  
 GGATTTAGTGTAGTGTAGTGAATGATTATTGATTGACAAACTTATAATATGTTAATG  
 40 TTTTCCATCTACCAATTACGAAAAAGGTAACAAATTTTTGTCACTAATCTTTTCGATAAAC  
 ACAAGTATGCAATTTTATTTTTATTTTTTGTATTCTCTACATATGCTAAGAATCTTAAT  
 AAAACAATAAGACCTTACACTAGTTTGGATTATTTAGAATACTTATCCACATCCCTTACT  
 TTCAGTACAAATGTCATCTTCATTCTTCCCTAGACATTATTTAAGAAATATTTACGAAAT  
 45 TTTACGAAATCAAAATAAATAATGTCAITGAGACATTTAAAAGTTTATCACTAAACTAAT  
 TCCCTAATTAGGGATAAATTTTCATTCTTATGACATACAAACAGAAACGTTGAACACGT  
 AGGCCCTCTTTGTTAACTCCTCACATTAATAATTTGTGCTAAACATCCTCACATTAACA  
 CTTGCTGAATGTTAGTTCTTAAGAGAGAAAAACTTTAATAATGTTTAGCATATATTTA  
 GTTAACCTTTGTTCTATGAAATTTAAAGTAATCTTTATGCTCTATGACATTTAAAAGTTT  
 ATCACTAAATTTAAGCGATTGTGATCTAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 114>:

**gnm\_114**

```

5  TCATTGTGACTAGCCAAGTAGCCATGCTGGACATACCAAAGTGGTCTGAGCCAAGACTT
   TCTACCTTTTGGTTTTCTCTAGCTAGACAAAACCTTTGCAAAATAAGATATATTAGTAGGC
   TGAATTTTCTCTGTTCATTATTTTCATCATTTACACAACTAAAAAAAATAAAAAA
   ATAAAAATAAAATAAAAAATAGGAGGTTTAGTAATAAAACGGACAATGAAAAAACA
   ACAGAAGAGAATGATTTATATATGTTAATAGTACTAAGGAACCTTTGGATCCACAGGAAA
10  ACGTAAACTGTGGAACACCAGCATCAAGTACTAAGGGGTTAATCCTTTTGGACTCCTCAA
   GCGACCATGAACACTTTGATGGAAACATAAGCAACTCAAGAGATTAGAAGATGGGAAA
   GTTTTATCACTATATCAATGTATATTTGTTACCAACTCACATAGTTAAGCAATCCGAAGA
   TTGTGCGACGGAAGTAGTGGGCCACAGAAGGATCAATGAACACTTTGCATGAGACGATG
   GCACAATCTCACTGTTCGGAATATCAGCATGATCATCTACCATCTTTAAAACTAGGATT
   TGCCTAAGTGATTTTTTCTTTCTTAACACTTCGCCAAATGGATCTATAGATCTAAGGTT
15  TCTTCTTCTTCCCTCAAGGATTATATGTGGGTTTAGTACTTCTCAAGTTATCTCGAATC
   TGGTTAGTTTTTACTAATCTACTATTTTACTAGCAGGAAAAGTCCAATAATACCATCTGT
   GTAGCCAAAAAANAACAGCACTGTGTAATCTGGAATGACGATATACCCCTGCTAA
   AACCTAAACTGTGAGGAGAGAAGGTCGCCCTTTTGTCCAGCAAGAATAAATCAGC
   TCGGCCCTCTTTGCCCTTCTCCTTTGTCCAGATTTTCTTCTCAACCTCTTTCTCTTTTC
20  TTACCGCGCAAAATTCCTATCTTTGAAATGCGCTCATCCCTTTGCGGTTTGGTGATTTG
   AAGATTCCGCTTCATATCCTTTGATCTGTAAGTTTCGATTTCCGATCTCCTTCGTTTGT
   TCTCTGCAAAATTTGGTTAGAATTTGTTCCGAGCATTGAATTTTCTCGTACATGATCTGT
   GTTTTTAATCTGTGTTTGTGATCAAGTTGTGAAATTCGCAATTTGGGTTTGGTGGCTC
   AAGGGTGTTTTGTTTCGTTAGCTAAATCCCAACAGAGAGCTTCAATTTCCAGAGATGGTG
25  GTAGTTGTAAAACCTTAGGCTAAAACATTAATCTCTGCTCTTAACTAGTGTGGTTTGGAT
   TTTTGTAGAAACAATGATTGGAGCATAAGTTTTATAGAAGAATGCTTCCAAGTTAGTT
   GCTTTTGTGCTATATCTTGAGGGCTTATGGTTATACAACCTTATAGCTCTTTTATTGGTTT
   TTTGTCTCACCTTTCTGTCAAGGTCCTATGTTAGTGTCATACCTTTGTTTCTCTCTTA
   CAGGCTATATAAAGACACTACTGGTTGAATTAGAACTCTGAGAGATATTAGTGTTT

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 115>:

**gnm\_115**

```

35  AGCGATGAAGGCCTACTCTTTTGCCCATCTAACTATCTAAATAGGCCTAGTCGAGGATA
   AACCTTTGGTTCTTTTCGTTAGTTAATAGGCCTAGGATTTGCTTGTACTAATTAAGTGT
   TGTATAATAATGTATACATATATATATATATGTTCTTTATAGTTTCAGCGTGAGACATG
   ACATTAACTAGAGCAACTTTAAACCTTGAATATAATTGAGCTTGTATACGTCGTGAGTT
   TCTTATTACATCAACTGAATTTATTTATCACTGAGACATTTATTGACTCCAGTCAATAAT
   AGTGGCTATATGATATAATTTGTAAAAAAGGTATGAAAAATGATGTTGAGAAACAAAAA
   AGGTAATATGTAGAAATGCTAAAAATGAAAAACAAGTACAAAAATCAGAACTTTTCAAT
40  GGTGTGGCATAGTGGTTACTTGGCTCGGATCTACTAGGACGAGTACGATTTCCGCCACGT
   ACAGATCTAATATCACCGCACCAATTAACAGATTGTTGGAGTTTGTCCAAATTTTCAAGA
   AGTAGATTCAACCAATCTTTCAGAAACGGAACAAAAAGATCTAAACGATATTGGAAAAAGT
   CTACTGTTGTAACCTTCTCAGGACGACCATCCCCATCTCCGTGAGTAGAAGAAATTC
   AAAATAATAAAAAATAAACTGAGAATAATTGATATGTCAAAATAAATTAGAACTAGCGAT
45  ATACTGCAGTGAATAGTAGATTAAACTATGTTAGAATTTGGATGATTCTACATATAAACC
   CAAAGACTAGTAATTAGTCATGACGCATTAGTGGAGAACATTTTCTACATTATAGGAAA
   GATCGAAATACCAACATTTT

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 116>:

**GNMCG19F gnm<sub>116</sub>**

CTGTTATCGTTGCGGGTATTTCCTCAATCTCTCTAATTTCTTATCTTAACTCCAAATTTCT  
 GTTTGATTTTTGACCTAAAGTCTCGATCTTTTCGTGACCCCTCTTCTTGATTCTCTGTTTAG  
 5 CTTCTAGTTTTGTTTCATGTTCTGTTTTTTTGACTACGTATATGGTTTCTTAGTGCGAACTCT  
 TGACTCTTTTAACTATAAATAGGGAAAAAATATGTGACTTTGGTACATAAAGGGAAAA  
 AATTGAGACTTTGGTTGTAATGATTTTGTATAGATCTGCGTATGAGAGTCTCTATTCT  
 GTGAACAATTTCTAAGGACCAATCTGGTTGGAGGGAATGCTATTGTGTAGCAAGGTGC  
 GTTTTTGAACTGTGTGAATATGTTGTTTTTCTATATATAGAGTTTAGTGGTGATGT  
 TTTGTTGTGCTGATTGAGAACTGTGAAGACAGAGACTACATTGTGG

10

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 117>:

**GNMCG20F gnm<sub>117</sub>**

ATCCCCCATCTTCATCAGTCACTTCTCAACGCTTCGCTCTTCCGCTAACGTATATCA  
 GCTTGCAGTTGGCTACGTGCTTTAAAGCTTCAGGGAGAACACTACTGCTCTTCTTCTCT  
 15 TGTCTCGCGACTCCACTTCTTAGCTTTAACTGATCGTAGTAAAGAGCGTGAAGAACAAATG  
 TTTACTGGTAATCTCTTGTTCTGTGAAGCGTGAAGACGTGCGTCGTAAAGAAAGCTTTAAG  
 GGATCCATTGAGCTACACACTTTTTCCCTTTCGATCTCGTCTAGATTCCGATGAGCTTTC  
 AAGAAGATGCTATAGCTCTGTAGAGATCGTCTGATTTCTAGCGGATTTCGGGACA  
 AGATTCCGAATCGCGTTGAATTTGGAGATTGTTAGGCTCCGTAAGTAGCGATCTCCGCT  
 20 AAGTAAGAATCAACTGTTTTAGCTACTCTTGTAGTGAACAGAGCAG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 118>:

**gnm<sub>118</sub>**

TTTTTTTTTTTGGGTGAATTTTTTTTTTGTTCATTTAATTTATCGATGTGAAAAAT  
 25 TAAACTTTTATGGGTGAGATAGAGAGAGAAAGAGGAGAGAGCATTCAAGTGAACGAAA  
 CGCATAAAATGCATGCACGACCTTGAAGACACACACAAAACCTCGAAAAGTGAAGAAAATC  
 CGCAGAGATTTAGAACAGACACAAAGTGAAGACTTTGGTTTTTTTTTGACTTTGTTAAG  
 ATATGTTTTTTGGTATATAATATATATAGAAATGAAATTTAGGGTTGGTAGGAATCATA  
 TATTTTGGAAAAAATAGTAGTGGTGACGTAATTTTAATATTTGGTTATATGTATTCAC  
 30 TAATTTATAGGTATTTTCTTCTACAGTTGGGGTATTTATATATAAGGAAAATATTGAT  
 TATTTTCATCAAGAAAAAGAAATATTCAATAGAAACATATATGTTTCTTTTGCNAAT  
 CATAAATATATAGAGTGCATGCATGACACTAACACACACATGCACAAAAGACTTTGAGGT  
 TCTTCTTTTCTCTTTTGACTTTCTTGSTTTGTTATTTGCTAATTACTCTAAGAAAATCATT  
 TTAATTTAAGTTTGTAAAGTTATAAAAATATCCTAAGAAAAAGAAAAATAATAGTACATA  
 35 AATTCCTACTTATCTAATTTAAAGATTATAATAGAAAATTTGCGATCGGTACATGTATATGC  
 TATATCTACTCCTCTGTCGTCATTCTCTGTATATGATTCTAACCAAAATTTGAGTTCCGAA  
 TACCCATAAAACTTAGAGTGGATTGAGACCGATAGATAAGTAAAAATTGACGATTCATATC  
 AAACTATGATCTTATGGTAGAATATATATTTCCAAAATAAGATACCAAAATTTATAGAGAA  
 CTTGCAAAACGAAATGGGAAGAATTGGTGGAAATATAAACTAAAAATTCATTCTTGCTTAA  
 40 TTGAATTTTTTTTTTCTACACAGAAGAAAAAATAGTCTATACCATCGACAAAAAGA  
 AATATGCAAAAAATCAACACAATATATTTGTAGGATTTGTTATTTTTTTGTTAATACIT  
 TTGAAGGATTTGAGTTAATGAATATATATATATATATATATATATATATATGTTTTTTTT  
 TTTGGCATTTTACTACATTTAAACATAACCTTGCTATTTATGAGGACCAATGTCATGTC  
 GCATGATAAACATACAGTATAAGTGTTCACACGATTTTATATATGTCATGTGATTTCTGT  
 45 CAAATAACACGTTTACTACCAAGAATATATCATCTAATTTGTCTAACTTTTACTCATGCA  
 CGGCTATTCTCCTCGTATTTCCATTAAATCTTTAATCTTTCTATCTAATGTTCAA  
 ATTTAATCTAATAAATGACACCATATCTTTTGGAAATCGCTCTCTTTTGGGTGGAACT  
 TTCTATATATCAACGAGCTACTATTAGGTACTACGTTTTTTCACCTCCCTTTTGACC  
 TTATATATAGCTAGGCTTGAACACCTATCGAGTAATGACTACTGTTGGAACGAGTAAA